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# THE ROLE OF EXPECTATION IN MUSIC

A STUDY IN THE PSYCHOLOGY  
OF MUSIC

BY

ARTHUR DART BISSELL

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GIFT

TO  
GEORGE TRUMBULL LADD

In grateful recognition

TO MR  
GEORGE LADD

# INTRODUCTION

ONLY a very few of those who show skill, or even attain celebrity, in any form of art are expert students of the psychology of the art they practice, or of aesthetical philosophy in general. All artists are, of course, conscious of certain judgments and feelings which impel and guide their practical achievements. They may also suspect certain undefinable instincts and obscure impulses which co-operate to the same end. But they have never collated and analyzed or attempted to evaluate, the various phases of their conscious experience; even less have they uncovered the variety, force, and related influence, of the mental processes that hover about the borders of the conscious mental life, or belong to the sphere of the properly so-called "subconscious." As to the metaphysical ground of the whole experience and of the whole realm of aesthetical endeavor and achievement in its relation to the world of reality, they have little interest. Indeed, they may regard such quest for the foundations of reality in man's artistic life and work as unworthy of serious study.

On the other hand, only a few of those who have written and taught the psychological theory or metaphysics of any form of art, or of aesthetics in general, have been of marked artistic temperament, or have attained remarkable skill in any form of artistic achievement. Their psychology is rather a matter of remote inference, than of near and immediate experience. But the science of the aesthetical is not like the sciences of the physical or chemical order. Nor can it in all its most important and interesting phases be treated experimentally.

The greatest interest, as well as the greatest value, then, belongs to the opinions of those who are both artist and psychologist, in dealing with the psychology of any kind of art. And, on the whole, this would seem to be most emphatically true of the art of music. This is true because the art of music is so largely concerned with the expression, control, and appreciation, of certain sounds that are born of obscure origin, and no sooner born, rapidly die away, rather than of permanent facts which vision can with steadiness contemplate, and memory accurately record. The musician who is also a psychologist has, therefore, his unique value.

Dr. Bissell, for a life-time, for fully forty years, has been a careful student and teacher of psychology, and also a student, teacher, and composer of music. For some time he has been definitely and diligently studying the problem: "The Psychology of Music." As an expert, he has studied this problem, not simply as it appeared in his own experience, but as it appears in the musical compositions of many scores of musical composers.

The psychology of music is a theme so vast and varied as to be beyond the compass of any one man, no matter how well fitted for the task. For a "Doctor's Thesis," however, it is required that some definite theme shall be chosen, expressible and precise, and capable of something approaching at least an answer which shall challenge debate, but which shall, at the same time, promise some contribution of distinct value to human knowledge on the subject. Much time and great care were taken in selecting such a theme for treatment in this thesis. Nowhere else, so far as I am aware, has this particular detailed inquiry into a certain problem of the psychology of music been attempted by any writer, whether competent or incompetent. For the special competency of Dr. Bissell, and for the great amount of expert knowledge which he has put upon the treatment, I bear witness with pleasure.

GEORGE TRUMBULL LADD.

New Haven, August, 1920.

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## PREFACE

A FEW WORDS of explanation seem called for, by way of preface, as to certain features in the handling of material in this paper. The bibliography contains no names of writers on this specific subject because I was unable to find any. Works that were consulted in an effort to define the problem have been noted, also others that have contributed helpful suggestions. In discussions of attention and rhythm where the subject matter is common property, so to speak, or part and parcel of my own reflective thinking, I have not felt it necessary to mention every writer who deals with the same material; the aim in both is too general except where specific applications to music are pointed out; and for those there are no authorities.

In the passages discussing the facts of music I have not deemed it necessary to espouse any theory on such matters still in controversy as degrees and nature of assonance, scientific theory of melody and harmony, or any other. The aim has been to analyze the common facts of the universal experience of music in the terms in common use, leaving it for others to work out those problems to their ultimate conclusion. Nor is my aim so pretentious as to present a comprehensive or final explanation of musical experience; it is the more modest one of calling attention to an important and as yet neglected factor in that experience. In spite of differences of opinion in details involved in such an analytical study—and there is always room for those—it seems to me that the main contention is substantiated.

As a final word it should be said that the experience subjected to analysis is that of the appreciative listener, not that of the composer or the student of theory, much less that of the psychological analyst. I have been in a more or less musical atmosphere all my life, as listener, performer (piano, organ, voice), composer and student, and have been much given to introspective observation. It is largely the results of this last that have been gradually elaborated and are here presented.

If I seem to refer to Beethoven frequently, my excuse is that his works are well-known and easily accessible, and personally I happen to be best acquainted with him.



# The Role of Expectation in Music

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## INTRODUCTION

### I. SURVEY OF WORK IN THE PSYCHOLOGY OF MUSIC.

Many investigators have been engaged on the problems here involved and much light has been thrown on many of these. The purpose of this brief survey is not to present any complete or even approximately complete statement of the work accomplished, but an outline sufficient to serve as a background for the investigation undertaken in the present paper. The justification for this procedure lies in the fact that while the elaborate studies made in many different directions have necessarily some indirect bearing on the immediate subject in hand, no one, so far as I have been able to discover, has more than casually mentioned the latter; it is taken for granted as obviously involved, so obviously as hardly to call for special study. In fact, the only writer who deigns to give it more than passing mention is not engaged in a psychological study at all, but a more or less critical discussion of the aesthetics of music as illustrated in certain composers;\* and he dismisses it with a paragraph, and does not consider it of sufficient importance to mention it in the index. Even Mr. Britan† in a work that explicitly discusses the psychology of music, devoting an entire division to it, seems not to consider expectation anything of a separate problem. Consequently there is, as a matter of fact, no literature that bears directly on the problem selected for discussion and the material as well as the method of treatment were necessarily sought out and worked out independently. The various elements involved in music have been more or less elaborately treated in a series of studies that have added enormously to our understanding of the mental processes involved and the typical reactions of musical experience.

Among the most important of these studies are those on Rhythm. Bucher‡ undertook to prove the economic importance of rhythm as a stimulus in labor, and others since have dealt with various aspects of the same problem. Irksomeness and fatigue are much relieved by the use of rhythm either in the labor or with it, while some tasks are felt as actually pleasurable which without it would be unpleasant.

Wundt has an elaborate treatment not only of the numerous elements that enter into the complete experience of rhythm\*\*, but of its origin†† and its development as well. Much of this has a direct bearing on problems of music as has been fully brought out by Seashore‡‡.

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\*Studies in Modern Music; Hadow, H. W., 1st Series, p. 64. Later ed. more fully.

†The Philosophy of Music.

‡Arbeit und Rhythmus.

\*\*Phys. Psych. 6th ed. vol. III, chs XV, XVI, XVIII, XIX.

††The importance in this process of the movements involved in walking had been pointed out by me in an unpublished lecture before I read Wundt's full discussion.

‡‡Psychology of Musical Talent, chs. III, IV, V.

and all serves to present a background for the operation of the special feelings and tendencies discussed in the present paper. The same is true of the treatment of syncopated and irregular rhythms by Patterson\*. But none of these writers indicate the connection.

Attention in its special form of expectant attention is more directly applicable to the phenomena of music, but is not always considered important enough for special study. Thus Pillsbury's elaborate discussion† does not mention the topic in any of the summaries at the close of the chapters nor in the index. Wundt‡ has a brief account of expectation and its correlatives of fulfillment and surprise, also Ladd.§ but both these writers are concerned with the phenomena of strain and relief involved in the experience and the modifying effect that expectation exercises on subsequent sensations in the direction of clearness on the one hand and illusion on the other, and neither hints at any connection of these experiences with the enjoyment of music.

Auditory phenomena of all kinds—with or without application to music—have been made the subject of elaborate investigation ever since the work of Helmholtz and Stumpf. The sense of pitch, of consonance and dissonance, of chord harmony, auditory space and time, the auditory image, difference between major and minor, all these have in turn occupied the field of inquiry and rival theories have been proposed to explain the facts for scientific psychology. An admirable summary of this work, with practical applications, is presented by Seashore\*\*, for whose aims the controversies as such are of secondary importance. It has been made clear, however, in the process of these laborious studies that even the simplest of musical experiences is a much more complicated affair than had been supposed. One of the most fruitful results achieved is the clear evidence of how vitally the nervous system is involved in all such experiences, from the primitive to the most highly developed modern. This aspect of the case is presented by Jentsch†† with some fulness, but is also treated in the general works on physiological psychology. Studies of special interest on the nature of melody as well as its effects have been made by Weld,‡‡ Bingham,§§ and Meyer,\*\*\* with considerable differences in conclusion, not however necessarily contradictory. An especially stimulating discussion of the intellectual element in music is to be found in the essay of Norton†††, but if, as he says, that is a neglected aspect of musical appreciation, expectation as an important factor in that aspect is certainly deserving of mention. If there is some work or review article in which this factor in the enjoyment and appreciation of music is discussed with any fulness, I have simply overlooked it in a rather careful search. For questions touching the history and interpretation of music and composers I am much indebted to the writings of Parry†††, Hadow§§§, Mason\*\*\*\*, Rolland†††† and Grove,‡‡‡‡ particularly to those of Mason. I also wish here to acknowledge my direct indebtedness to Dr. George Trumbull Ladd, for personal encouragement and stimulating suggestions.

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\*The Rhythm of Prose

†Attention

‡Op. cit. pp. 320f.

§Phys. Psychology, pp. 621f.

\*\*Op. cit. passim.

††Musik und Nerven.

‡‡Experimental Study of Musical Enjoyment.

§§Studies in Melody.

\*\*\*Psychological Theory of Music; Exper. Studies in Psych. of Music.

†††The Intellectual Element in Music.

††††Evolution of the Art of Music

‡‡‡Op. Cit.

\*\*\*\*Beethoven and his Forerunners, and the entire series.

††††Jean Christophe; Beethoven.

†††††Dictionary of Music and Musicians; The Nine Symphonies of Beethoven.

## II. GENERAL FEATURES OF EXPECTANT ATTENTION.

Attention seems to be the name psychology has agreed upon to indicate the degree of mental energy, whether voluntary or involuntary, actually engaged in presenting more or less vividly some sensation or object or image or thought before the field of consciousness. The difficulty involved in attending to an element of feeling lies in the fact that there is a certain feeling-tone of interest always associated with the attention, which is greater when this is voluntary, and that feeling of interest tends to supplant the feeling to which attention is directed. Severe pain might assert itself over against this feeling of interest but it is itself too serious a disturbance of the process of attention. There is also a motor accompaniment to attention which, like the feeling of interest, is more marked with the voluntary attention.

Involuntary attention may be illustrated by such experience as the following: I meet an acquaintance on the street and glance up out of a brown study. Being so pre-occupied my mind receives only a sort of confused impression: "face." I pass on without bowing and a couple of seconds later the impression clears up, the features are distinct, and too late to bow I recognize a familiar face. The interruption of my absorbing train of thought in glancing up released enough mental energy to define the confused sensation content and took a certain amount of time to do it. Or again, in the partly instinctive effort to save myself from injury in a fall, I seize an object with my hands; as before from the eye, so now from the hand, comes a confused sensation content: "something." If no defining process had ensued I could have reported nothing as to shape or hardness or position. But here again, after the immediate preoccupation in connection with the fall has abated, mental energy was released and the object was defined and I perceived the peculiar rounded shape and medium hardness and recognized it. In neither of these cases cited does close introspection reveal the presence of either voluntary effort or any motor accompaniment, though the latter was no doubt present unconsciously. From this involuntary stage to the closest voluntary absorption in minute observation, or in following an intricate train of thought, there are all shades and degrees of this mental energy with corresponding variations of voluntary and motor elements. In the case of voluntary attention, at least, there is involved a sort of selection, a turning from some other would-be claimants to the field of consciousness to this or that in particular; and the process of observation or thinking is more successful, other things being equal, in proportion to freedom from disturbance by other interests that might intrude on the field and so divide attention. Our bodily and mental mechanism is so arranged that operations which at first required close and divisive attention are relegated without our choice more and more to the realm of habit and recede from the field of consciousness, thus leaving energy free to deal with the new objects of voluntary selection. It is from this mechanism that those phenomena have their origin which we include under the general term of expectant attention. In this class of mental experience the selection of the object of attention, sensation or image or thought, is pre-arranged either by preceding voluntary effort or by concomitant circumstances. The result is widely divergent according as the expectation is met or not met. If on the one hand the object previously selected is actually presented, not only is the definition of it clearer than it would be if not expected but it also takes less time than it otherwise would. According to Pillsbury\*, maximum quickness is reached when a signal is given about two

\*Attention, p. 82.

seconds before the stimulus is applied. If on the other hand some other object than the one selected is presented, then the result resembles the examples cited above: mental energy being engaged on the selected object is less free for the unselected different object, the definition is not so clear and takes more time. In fact the object actually presented is liable to be distorted in consciousness, and actual illusions may ensue as to size or intensity or other qualities. The mental deception may even go so far as to replace the presented object with the expected one. This is illustrated in the process of reading, when an error is overlooked and replaced by the correct expected word, or missing an error in proof reading; in the process of writing the hand sometimes anticipates a future letter when consciousness for the present letter seems a blank, i. e., looking back one cannot remember writing "ac" for "ca." On the other hand it is just the alertness of this attention that conduces to rapidity of reading, as the mind anticipates words and phrases, even clauses, and sometimes from a mere glance can forecast the meaning of an entire sentence.

Like all attention this expectant phase is accompanied by a certain feeling of interest that grows with the increase of expectation (up to a certain point), and this interest may pass over into an experience of pleasure if the object that had been selected is actually presented, a pleasure varying in degree with the intensity of attention and interest. From this point of view we have a rather close analogy here with the reactions from rhythm, a point that will be treated later (I, 4, below). As a matter of fact all expectation is a state of growing tension that may be heightened right up to the moment of relaxation or relief. There is a point of intensity beyond which the tension becomes unpleasant, though even then the relaxation may bring a relief with distinct pleasure tone. If the object presented be the one expected there is along with quick and clear definition the pleasure of satisfaction. If a different object is presented there will follow as intimated above a slight mental confusion involving longer time for clear definition and with various possibilities as to feeling-tone. The term "surprise" will serve in general to designate the feeling attitude, but this may take the flavor of disappointment with varying degrees of displeasure, from simple failure to please, down to positive disgust; or on the contrary, it may add to the keenness of interest and cause positive pleasure.

Running parallel to the simple definition of the object is another process that calls for closer attention and is more complex, so that surprise results in greater demands on mental energy and requires still longer time: namely, apperception. The relation of the object that occasioned surprise to that which was expected and to the general mental furnishings must be discerned and interpreted before there is a sense of satisfaction. There is the less difficulty in accomplishing this if some continuity has been maintained in presenting even the unexpected object; but if the continuity is broken, as for instance by inserting a foreign word or some unmeaning sound in a sentence where a definite word was confidently expected, the sudden demand on mental energy involved in the difficulty of assimilation begets dissatisfaction and unpleasant confusion, which may be intensified if the task is actually impossible, i. e., if the strange sound was inserted on purpose because it had no assignable relation to either what preceded or what followed. This is quite a frequent experience in listening to public speakers when some word or phrase is mumbled so that it does not present the expected word but an unmeaning sound; we bend our energies for the moment in trying to define the sound in order to fit its meaning into the context, and by the time we have succeeded the sentence is so far advanced that we have lost the thread of it and with it an essential link in the description or argument of the speaker.



It is within this range of experience that expectant attention finds special application to the phenomena of music, its enjoyment and appreciation. There is the quick defining of the auditory sensation in consequence of the fixed attention, since preceding sensations have served as a signal, and there may be under certain conditions partial or complete illusions; and the former, at least (quick definition), is contributory to the general effect produced. But the broad fact that serves as the background for the whole series of processes in music is this: we are so constituted physically, we that love music, and through our experience of the facts of this art have become so habituated mentally, that certain sequences of sounds of a rhythmic, melodic or harmonic nature beget definite expectation of other sounds to follow. It may be an interesting problem to consider: what are the outside limits in the sequence of sounds from which may result the faintest expectation of subsequent sounds; important results might be secured. In this paper I aim to assume the sequences of music as they actually exist and point out and analyze the operation of expectation as it enters into the enjoyment of the art.

It will be worth while to pursue a little further the analogy already adduced above of the spoken sentence. A sequence of words uttered in our hearing sets in motion a series of images that tend normally or logically in a given direction. At several points we can anticipate the next word, and may be surprised by some unexpected word. We hear, for instance, the words: "The distance between": at once we expect to hear the speaker give the names of two places and the conjunction "and" joins the names. If the sentence proceeds: "Boston and New York", there is so far satisfied expectation and we now anticipate hearing the speaker announce a number of miles and expect his next word to be "is". But suppose in place of any geographical term the speaker substituted such words as "love and hate", or "heaven and hell", at once a rapid re-adjustment of expectation is made necessary and we no longer look for a statement as to number of miles. There is a certain surprise in such a turn and it may not only be of pleasurable interest, it may even be heightened to the point of exciting laughter by careful preparation. It is very much in some such way as this, as will be pointed out repeatedly, that a sequence of tones, through the relations of tonality or pitch or what not that subsist between them, leads to expectation of a certain tone to follow—for instance, the tonic in a cadence after the leading tone has been heard. When the expected tone is duly presented, the tension is relieved and there is the pleasure of satisfaction, a pleasure that can be heightened by increasing the tension. If the expected tone fails to be heard, then there are degrees of surprise and this may be pleasurable or unpleasant according to conditions. If in spite of causing a surprise the new tone can be readily assimilated to the foregoing material, or if it starts a new continuity, the relation of which to the preceding can be readily apprehended, there may be a keen pleasure added to the antecedent interest of attention. But if the new sound is so isolated from all foregoing sequence that no assimilation seems possible and no other continuity is established, then even a sensuously alluring sound may cause genuine and positive displeasure.

Since, as will be shown later\*, succession and repetition enter as integral elements into the experience of music, it follows that this kind of expectation must be constantly operative in the complete experience of enjoying and appreciating music.

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\*v. Intro. III, 1 and 2 below.

### III. GENERAL GROUNDS FOR THE IMPORTANCE OF EXPECTATION IN MUSIC.

1. As already intimated, the role expectation plays in music is somewhat different from that of expectant attention in audition, a subject that has been so persistently investigated. That succeeding sensations and feelings do undergo modification by reason of it cannot be questioned, but it is not that phase of the subject that I wish to follow up, not the modification of sensation leading in the direction of illusion or even of increased distinctness, with the consequent feelings. It is rather the modifications of feeling that flow from a sensation that may be a correct representation of the objective fact but which is preceded by different kinds and degrees of expectation. The sensation gives a correct report of the sound as objectively produced—or at least the illusory feature of it is unimportant and secondary for our purpose—but because of the antecedent expectant state of mind the feeling of pleasure or other affective state accompanying the sensation is markedly different. There is more or less clear consciousness that the sensation presented is—or is not—what one expected to hear, and a feeling of satisfaction or even stronger pleasure due to the expectation and not to the sensation as such. The same sensation in another connection or in no connection would have a very different feeling tone. But so much of the material I have to present and discuss will furnish constantly repeated illustrations of my meaning, in so far as it lacks clearness, that I do not need to anticipate at this point.

Other branches of art are subject to this same effect of expectation in greater or less degree. But the one feature common to those most affected by it is that of motion or succession. Thus poetry (especially when recited), drama, oratory, dancing, fiction, all tend to excite anticipation in varying degrees and various ways, and thereby modify the attendant or succeeding emotional states. In dancing, for instance, a consecutive flow of movement satisfies expectation, while a sudden change or interruption is apt to excite surprise. In fiction one main feature of the writer's art is the leading up to, preparing for, a climax or dénouement; i. e., he builds up expectation to the point where the satisfaction or surprise experienced shall be at a maximum and give the highest pleasure. Similar things may be said of the other arts above mentioned, and it is true of all of them that the very fact of motion, succession, invites and even forces the reader or listener or spectator (whichever it may be) to make a more or less definite forecast of the word or motion or personal quality or event that is to follow. And in all these cases the mere meeting of the expectation in all its details affords pleasure of a kind. It may be no more than the pleasure of gratified prophetism, that finds its expression in common life in the "I told you so" of the gossip. But it may be also the pleasure of satisfaction in a more aesthetic phase of the art; in the consistent portrayal of a character in fiction, the faithfulness to real life in describing emotion or conduct or conditions, or many another that might be adduced. In the dance there may be satisfaction in carefully and consistently represented symbolism, meeting the acme of expectation. In poetry we may enjoy the consistent use of appropriate diction, maintaining of rhythm and other metric features, handling of rhetorical figures—especially an elaborate simile such as Goethe has, for example, at the beginning of Canto VII of his "Hermann," or De Musset in "Nuit de Mai" on the pelican. But great as is the aesthetic pleasure arising out of even a heightening of expectation, a far greater degree of enjoyment may at times be attained by a carefully planned surprise, the appropriateness and artistic skill of which is recognized and approved. Especially is it true that sur-

prise conduces to the effects called humorous, witty, comic; exact following of expectation here would result in boredom and somnolence of the audience.

It may even be contended that motion or succession is even more essential to music than to any other of the arts. In speech a single word, a sound not followed by another, leaves a perfectly clear image or meaning in the mind of the hearer, a pose in dancing is apprehended at a glance and has a beauty and meaning of its own quite apart from any succeeding pose or movement. But a single tone, or even two simultaneous tones or a chord, have no suggestion or meaning in themselves; it is only when the tone is followed by one higher or lower, or even at the same pitch, or when the interval or chord is succeeded by another, that we have the beginning of music as something with meaning. And this succession must be one in time, not so spread out in space that a considerable span of it can be apprehended at a single glance. There is succession in design, but the purpose of the very succession itself is that the mental grasp should include such a span, then the succession may be observed as an afterthought in the analysis of the pleasurable effect. In the case of poetry and the like one fragmentary meaning is succeeded in time by others and the mind is busy constructing and apprehending the relations of the succeeding images; in music, on the other hand, there must be a succession of sounds before even a fragment of musical meaning emerges that can be joined to subsequent fragments.

2. But music possesses one point of great advantage over all the other arts—with the possible exception of dancing—in this matter of expectation in its unique position as regards repetition. The other arts allow of repetition (dancing particularly), but music calls for it, demands it; it enters into music as an integral factor. It will be instructive to glance at some of the possibilities of repetition in poetry. The Hebrew poet regarded with great satisfaction a thought identical in substance with the preceding line but different in expression; this kind of parallelism is of the very essence of his poetry. In modern and occidental poetry one of the commonest forms of repetition is the recurrence of a refrain at regular intervals or at the end of a stanza, sometimes verbatim, sometimes with variations. Rosetti's "Lady Helen" and many early and later ballads furnish striking examples of this device. After the first repetition the mind is forced into the attitude of expectation on the approach of the corresponding part of the next stanza and pleasure is experienced in different degrees according to varying exactness of repetition of the refrain. Another frequent device is the repetition of the phraseology of one line in the subsequent line for the purpose of special emphasis on the difference ending of the second line. Tennyson resorts to this quite frequently in the "In Memoriam," several fine examples occurring in the prologue. He also repeats in one instance two entire lines verbatim; such a repetition, however, stands alone (as far as I recollect) in his entire poetical output. A third use of repetition in poetry—except in that of the *vers libre* type—is in the rhythm, and this is where poetry makes its nearest approach to music. In his "In Memoriam" Tennyson maintains the peculiar four-line iambic tetrameter stanza unaltered to the end, with occasional breaks in the flow of a line. Spencer adheres closely to the pattern set in the first stanza of his "Faery Queen" all the way through the long poem. Dante repeats through the three books of his "Divine Comedy" lines of the same general rhythm, with the three alternating rhymes. The psychological explanation of this phenomenon will be discussed below (I. 7). Now while all these kinds of repetition are found in poetry and constitute one important source of the enjoyment it furnishes, there is in one respect a very marked difference in music—even more marked as over



against drama, oratory or fiction. When an author has expressed his fundamental thought in fitting language he not only is not expected to repeat it at once in the very same language but he would be severely criticized for so doing. Except in rare cases, a poet is not expected to repeat at all a thought once uttered, much less to use a beautiful simile or metaphor repeatedly in the same poems—or even in different poems. Even when a poet falls into the mannerism of using certain mellifluous or high-sounding words—as Swinburne overdoes “flowers” in his shorter poems; Shelley, “crystalline” and the rhyme “mountain, fountain”; Hugo “les flots;” Schiller “unglücklichselig” and “fürchterlich”—they pall on the poetic appetite, the words lose their force. In music, on the contrary, the significant thing is that the composer having stated his subject may, or even in some cases must, state it again. The repetition may not be exact (v. below, a.), though in many cases it is. And even if he does not repeat it at once he is sure to do so a number of times before the conclusion of the piece. And if he has a specially beautiful chord or sequence or melodic phrase (comparable to a beautiful simile or metaphor) he is expected to repeat it and would fail of deeply affecting his audience if he passed on to ever new material and never came back. Nor is it lack of invention that leads to this feature of composition; there is hardly any limit to the variety of rhythmic, melodic, figured and harmonic material at the disposal of the composer of music, and in some of the modernist composers of music there seems almost to be a rivalry to see which shall have the greatest variety and least continuity or repetition. It will take time to decide whether repetition or constant variety will win out in the end; at present, however, repetition has the field and a back-ground of countless generations of music-lovers.

a. But there must be a natural limit somewhere to repetition, and it is found in the span of interest, which exhibits a certain degree of periodicity analogous to the rhythm of attention. A child will repeat an interesting operation fifty times or more and then stop as suddenly as it began, interest being transferred to something else. But even the fifty will not be simple exact repetitions; there will be some sort of variation at intervals that are approximately equal, say from twelve to fifteen. The span of interest that appears in these experiments appears also in musical repetition. This is demanded as a part of the treatment or development of a thought by the composer, but too frequent repetition or too little varied will lessen and finally kill interest. A fine example of repetition nearly to the limit yet ending with intense interest is found in the Andante of Beethoven's Symphony, No. V; the simple figured chord 1-3-5 followed by a short scale passage 5-4-3 is repeated with its harmony 6 times with variations, and then a new variation introduced in melodic and harmonic treatment as a last instance. The passage will be discussed later (III. 7). It is from this point of view that we must interpret the enthusiasm shown at different times for sets of variations of a theme or air; such a composition is fundamentally an effort to combine the pleasure of repetition with the interest of variety. It becomes possible to multiply the variations almost indefinitely, some composers having gone into the thirties. While some of these are mainly formal in their character, others are elaborated into actual works of art, for instance Beethoven's “Thirty-three Variations” on a Waltz by Diabelli. The acquaintance with the theme on which variations are written constitutes the basis of expectation of a new kind for each succeeding variation and a ready means of preparing new pleasures of surprise in each. Now there is nothing parallel to this in poetry or drama (unless Browning's “The Ring and the Book” is an example); and the nearest approach to it in any art is in aesthetic dancing. In this the same figures and poses may be and must be repeated and it is a debatable question

whether there is any limit to the interest in this kind of repetition; though there is a decided limit in the capacity of the human frame to the variations that could be developed on a central succession of poses, motions, figures and groupings. (v. below I. 7).

b. It is an interesting and important question at this point why in the dance and in music so much of repetition is possible, while in poetry and the drama it is impossible. The answer lies in the difference of mental appeal of the two groups. In both poetry and the drama (and the same may be said of oratory and fiction) the material consists of words and sentences conveying definite intellectual images and judgments to which the reaction must necessarily be intellectual in its character. This must not be taken to intimate that there is no appeal to the feelings in those arts. There is, often consciously, and at times it becomes absorbing and powerful. Such a tragedy as Hamlet or Lear, rousing or tender lyrics, the eloquence of a Demosthenes, stir the emotions as intensely as any music can; in fact, it is to be doubted whether the emotions are ever so profoundly excited by music alone—in its modern western form at least—as by the higher forms of these allied arts. The difference lies in the direct appeal and the means employed. Poetry, drama and the others, in so far as they stir the emotions, do so by bringing images of real life or imagination vividly before the audience or reader, creating a convincing aesthetic illusion. The direct appeal is intellectual and must be successful in securing a reaction in kind, i. e., the material must be apprehended, in order to succeed in rousing the feelings. If the sentences uttered are not understood there is no emotional response, or it is negligible. Now in music there is no direct appeal to the intellectual activity. In so far as intellectual reactions are released by music they are secondary and incidental, by-products, so to speak, and may not be alike for any two persons hearing the same music and even deeply moved by it. It is not intended that such reactions should be alike, whereas in the other case they must be, or there is no affective response. The means employed in music to elicit intellectual reactions are such special devices as certain kinds of repetition, modulation and especially form. The direct appeal is to the feelings, it may be nothing more than sensuous delight over sweet sounds or the higher more complex emotions growing out of aesthetic enjoyment and approval. The end in view with drama or fiction may indeed be to stir the emotions, at least the aesthetic approval, but the means used are intellectual in their nature. Now when an image or judgment has been presented to the audience or reader, the very nature of intellectual activity demands that other images and judgments be presented, and then the mind proceeds to assimilate, discriminate, compare and otherwise apperceive the new material. There must be, in brief, discursive intellection, the indispensable method of grasping a unity in all these arts. Now while in the higher forms of music such intellection is not ruled out—in fact, becomes necessary for highest aesthetic appreciation and enjoyment—the immediate appeal and effect is of the affective type, pleasure of one kind or another; and it is in the very nature of simple pleasure of this kind to invite and enjoy repetition. "Do it again," the child keeps on saying, and the audience demands an encore, this being enjoyed even if the same selection is rendered note for note. The pleasure can be repeated a certain number of times without palling. But if a melody or phrase that is recognized as one of transcendent beauty haunts the mind persistently long enough it ceases to please, or at least the usual enjoyment is for the time in abeyance. And the utter boredom of airs from "Trovatore" or "Faust" on hand-organs or other mechanical contrivances is a familiar phenomenon resulting from too frequent repetition. *Mutatis mutandis* the same thing may be said of the

aesthetic dance; although there is no mechanical contrivance—unless it is the picture screen—that can offend by such tiresome reiteration. But in the dance itself the pleasure afforded by the beautiful rhythmic motions is the direct effect and it is possible to repeat the same motions a number of times without causing the kind of boredom the audience of a drama would suffer if an entire scene, or even portions of it, were presented again before the close of the performance, or a reader of poetry if the author repeated a beautiful stanza or simile verbatim. We do come back to a beautiful poem or drama with interest and a certain kind of expectation then emerges as a direct result. The greater the indirect appeal of the work to the emotions the more repetition it will stand.

c. The suggestion may be offered even as an objection, that repetition is a phenomenon of later growth, a consequence of higher development of the art of music. The answer is that in all the folk-songs of all nationalities repetition is omni-present. Even if a complete song consist of a melody in which new material is being constantly presented, it is bound to have an indefinite number of verses each of which repeats the melody exactly or with slight changes of ornamentation or the like. And going much farther back in the development of the art, to the music of the most primitive peoples known, the music consists of little more than melodic phrases—usually in intervals of the triad—howled out over and over again with evident delight. All of which leads inevitably to the conclusion that repetition is basic and not incidental, a psychological necessity as postulate for all later development. In fact, but for this peculiarity in the very foundations of music all subsequent development must certainly have taken a wholly different direction. For repetition is the basis for all that side of musical art known as form. As this point will be fully treated under the heading of "Form" (IV. 1) it will not be necessary to dwell on it here.

3. There is one universal fact of mental life that is of the utmost importance as a basis of expectation, that is habit. As it concerns us here I may confine discussion of it to two phases.

a. First, habit as subconscious or reflex. Of this type are the reactions of our nervous system to rhythm, to melodic intervals, to volume and rapidity of sounds articulate or inarticulate, to absolute pitch, in the same class with the instinctive reactions of animals to a great variety of stimuli. Even before these responses emerge above the threshold of consciousness they are effective in contributing to the action of music in giving pleasure; but there must be some antecedent experience of that pleasure before such habit can become a basis of expectation with the new effects in producing pleasure to which it leads. A fuller discussion of some of these points will be undertaken later (I. 2; II. 1, and 2, and 6, c).

b. Second, habit as a result of conscious experience and voluntary activity. As applied to music this will manifestly lead to great variety in expectation. If the habit is the outgrowth of long-continued experience, e. g., of hearing of a certain form of scale from childhood, the expectation will follow along the lines of that experience, any tone lying outside of that scale would occasion a shock of surprise. To cite another example, if the harmony actually heard from childhood has been of the simplest, say of the fifth below the melody (v. III, 1, below), the appearance of the third is likely to give a shock. Further applications in detail will follow later.

But in addition to the general effect of habit long established there is also what I may term incipient habit. By this I mean the state of mind induced at the beginning of a piece of music when the rhythm, melody and harmony (if it is modern enough), have so far advanced, say three or four bars, as to impress a sort of musical pattern on the

mind of the listener so that succeeding appearances of the pattern have an aspect of familiarity. A further stage of this incipient habit is reached when a listener begins to get accustomed to the language, the idiom, or even the mannerisms of a given composer. Expectation in listening to his works takes more definite shape in proportion to familiarity with his ways. When it forecasts with considerable exactness the line of development in a new piece, the treatment of a new subject, then the interest and pleasure is lessened; while the composer who can keep in advance of expectation without too severe shocks of surprise, amounting to a mannerism of a different kind, will be able (other things being equal) to maintain interest and satisfaction. The question how far such habit can be voluntarily modified so as to result in the acceptance of bizarre, not to say abnormal, combinations, will be raised at a later stage (III, 5 below).

It remains to indicate briefly some possible applications of this form of habit in the kindred arts. The particular form of poetic or dramatic art to which one has grown accustomed, establishes the habit of mind and resulting attitude toward all new experiments. One who for this reason demands accurate rhythm and rhyme in poetry stumbles over the apparent lawlessness of the *vers libre* style, or even at some of the uncouth lines or rhymes of a Browning; such treatment runs seriously counter to expectation. Temperament in the reader has its share in this result. And it is hardly to be doubted that persistent voluntary effort might lead to an incipient and finally well-established habit in consequence of which the strangeness disappears and one experiences actual pleasure in that which was formerly regarded not as poetry, but rather dull prose chopped into arbitrary lengths. Analogous situations are frequent in music and in the other arts.

c. Finally it should be noted that all these conditions growing out of habit are equally valid facts for any and all systems of music, whether pentatonic, whole tone, modal or diatonic, whether harmonized or unharmonized, primitive or most highly developed modern. The facts and phenomena indicated are not peculiar to music as an art but are characteristic of mental activity generally as manifested under the particular conditions prevailing in this and the kindred arts.





# EXPECTATION

## I. EXPECTATION AS IT APPEARS IN RHYTHM

1. The subject of rhythm has been so extensively and thoroughly investigated by psychologists, although without any direct bearing on the subject of the present paper, that it is unnecessary to do more than present a somewhat sketchy account of its general characteristics as preliminary to the special study in hand. Rhythm, as it is involved in music, is in its essence a grouping of discrete units of time into larger units. The individual units, as well as the groups, are theoretically equal respectively to each other; but not only are the groups sometimes lengthened or shortened in actual experience, even the smaller units, as proven by mechanical time measurements, of mental grouping, vary in length. Within the limits of a group there is alternating retardation and acceleration, especially if the span be somewhat long. As the point that divides one group from the next is approached, the units tend to be slightly accelerated. After that point is passed, they are slightly retarded. In both cases they remain equal for subjective experience. Nor is this the only difference between rhythm as regarded subjectively and objectively. All the discrete units of a mechanically equal time series may be marked by equal stress, so that objectively there is no grouping; and yet subjectively these can be grouped in a variety of ways: by two, or three, four or even five, and the rhythm in each case can be steadily maintained in thought or changed at will from one grouping to another.

But an experiment of this kind brings out the great range of difference between individual subjects in respect to capacity for grouping. At one extreme is the subject who falls into any desired rhythm by a sort of instinct, whose regularity and steadiness can be counted on; who can shift the grouping readily; who can keep several groupings going simultaneously, like two and three and four against each other. At the other extreme is the subject who cannot even march in time with a company with all the assistance that comes from the suggestion of others keeping step, who is apt to drop out a beat or two from a perfectly simple and regular rhythm all unconsciously and who cannot even distinguish an objective grouping that is plainly rhythmical and one that is not. And between these two extremes there are all degrees. This is due in part, at least, to the fact that the rhythmic experience is by no means a simple one; indeed, it is a highly complex mental fact, and into it enter not only perceptive and motor elements, but time sense and the alternation of tension and relaxation. Subjects who are keenly perceptive may be lacking in time sense or vice versa, and of these various elements there can be all kinds of combinations of varying degrees and for each combination there is a corresponding difference in the rhythmic experience. It follows as a matter of course, that the degree to which expectation as begotten of rhythm enters into the enjoyment and appreciation of music will depend very largely on the particular combination of the several elements that happen to be represented. One deficient in time sense may, indeed, be susceptible to the sensuous appeal of interval or timber or harmony, but he would be at a decided dis-

advantage in the matter of anticipation based on rhythmic grouping. Either extreme may be regarded as to a certain extent abnormal, and is in reality rather uncommon so that it occasions remark. The present discussion needs only to consider the fairly normal listener to music, who is pretty well balanced in possession of time sense and perceptive and motor elements.

One factor that has a larger share in the interest of rhythm than it is usually credited with is more truly intellectual in its appeal, and is closely akin to the operation involved in the psychological experience of number. When a child attains to the ability to combine mentally several discrete things as units in a larger unity, which is of the very essence of number, there is created for it a fresh interest. It enjoys the effort to extend the range or span of the larger unity until hundreds are a thing of the past, and the child boldly ventures upon thousands and millions. While unable, of course, to grasp these larger numbers apperceptively, it has a certain sense of power in embracing more and more in the larger unity that has a striking attraction for the child mind. The primitive man, even before he had advanced to a grasp of any but the smallest group-units in number, found a corresponding intellectual interest in rhythm, in which there is a definite grouping. This was an important factor in leading to the fuller development of rhythm as an isolated experience independently of other musical elements. With us the intellectual interest is abundantly supplied from other sources, and that fact, together with the greater interest developed in melody, especially in conjunction with harmony and form, has led to a comparative neglect of rhythm as a separate exercise and means of enjoyment.

2. Although the claim might be set up on plausible reasoning that rhythm in its isolation is not entitled to the name of music, that term being reserved to designate the combined product of rhythm with melody, or with that and harmony, it is nevertheless that one of the three elements that came earliest to some degree of development. And this development was quite advanced before melody was consciously combined with it in primitive singing. Doubtless the beginnings of melody antedated the full development of rhythm, (v. II, I, below), but even before that the play instinct led to activities with the two feet and two hands that resulted soon in the characteristic reactions of rhythm. And no other element of music is so distinct in its somatic reaction as this. The pleasure primitive man experienced in this exercise led to repetition and cultivation of it even before there was any conscious artistic impulse. Some degree of proficiency in it had been acquired as a prerequisite to its use in obedience to aesthetic longings. It was also the same pleasure that led to its continued exercise independently of melody even after the latter began its course. There is no question as to the correctness of the intimation by Mr. Patterson\* that rhythm, as the savages of today, and even of early times, know it, is to us in our civilized sophistication largely a lost art. The rhythmic patterns set up by a drum corps on a city corner are far more simple and regular than some that are found in actual music, or are practiced by tribes that approximate primitive man in some of their activities.

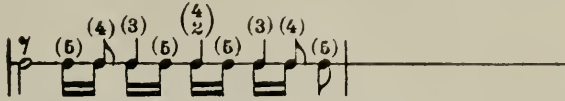
In the passage above referred to, attention is called to the ease with which the American Indian falls into syncopated rhythms where three-beat groups are pitted against two-beat or four-beat. Any piano teacher can testify to the difficulty involved in trying to train a pupil to play a melody that proceeds by twos against a base figure that proceeds by threes, much more when the melody doubles the speed.


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\*The Rhythm of Prose, W. M. Patterson, pp. XIX and 6-7.



"Primitive rhythms," a discussion by John Comfort Fillmore,\* speaks of the rich variety and complexity of rhythm in the music of the Omaha Indians. Mr. Fillmore has told in my hearing of an observation made on a sort of drum corps of Negroes from Dahomey in Africa. Five men were pounding out a rhythm with clubs, each one in a different grouping, with a resultant that might be indicated by the following notation:



It took careful listening to assign to each club its exact grouping. He finally arrived at the following solution: A big club with one heavy pound united the whole series, represented above by ; another

divided that in two , another into three , another into four  and the last into five . The time on the grouping

into five has to be slightly re-adjusted to make the five beats equal in length, but with that allowance the above rhythm is heard. With some practice I have worked it out with the five fingers of the right hand, both with and without the readjustment; there is some little difference but the freer treatment of the syncopation gives a more pleasing effect. A city drum corps would find that method of evoking a rhythmic pattern exceedingly difficult; fives against fours and threes all given simultaneously, seems beyond the limits of possibility. But for those Dahomey Negroes such complicated co-operation, each one going his own more or less independent way, was so easy that they laughed while keeping it up with regularity and evident enjoyment. In the same spirit the Dravidians of India beat out as a special dance a rhythm that has seven approximately equal beats in each larger group. This rhythm is sustained by the participants until they are wrought up to a high pitch of excitement. The excitement amounting almost to frenzy often observed in religious gatherings of the untutored, or others not wonted to the inhibitions of civilized life, is promoted if not largely caused by the swaying, clapping, stamping and other rhythmic exercises—including singing—that are indulged in by the devout.


3. More or less discussion has gathered about the question as to the original rhythm and time used in music, and also to the origin of the various rhythms. Both questions seem to find a satisfying answer in two general facts. The fundamental fact is that of man's physical constitution, namely, that he possesses limbs symmetrically by pairs, two arms and hands and two legs (to say nothing of ears, eyes, lips, nostrils, etc.) Now a quadruped in its locomotion, whether deliberate or hasty, handles the legs in a sort of rhythm—sometimes quite pronounced. And so man for his purposes of locomotion fell by necessity into a grouping by twos. And as the legs move back and forth in propulsion, so also the arms swing at the side to the same rhythm by way of balancing the body, while at the same time they are available for other movements in which alternation made the same grouping. It might seem strange, since rhythm and number

\*Cong. Rep. Anthropol., 1893, p. 172; quoted by Patterson l. c.

are so closely akin in their psychological nature, that two and its powers did not become the base of further mathematical calculations as man's grasp of number units enlarged its span. The simple explanation is that on each of the two hands were very conveniently situated five digits which furnished a definite span as a starting point and one that was doubled by the digits of the other hand. Barefoot man is so facile in the use of toes for prehensile purposes that they with the fingers may very possibly have furnished the score of twenty that was the limit for counting for so long. In any case the prime number five with its multiples—and eventually their powers—developed into our mathematical system because of man's possession of five digits; and rhythm started out by two-beat movement and kept that as its base because of the convenience of two legs and two arms.

The other general fact is that in actual music as it has been developed, everything is based on two and its multiples. Not that all measures have an even number of beats; but even where they have three or five or seven beats the measures are grouped by twos and fours. Or if a three-beat measure is found to be grouped by threes, the effect is precisely that of a  $9/8$  measure, and these larger groups are in still larger groups of two and four. It does not follow that all music, all pieces and songs, have an even number of measures. But it does follow that in those specimens of music that represent the form from which it is possible for creative art to deviate for aesthetic purposes, the symmetrical grouping by fours and eights is strictly adhered to. This appears in all simple varieties of the song-form, (v. IV, 1 and 2, below).

Subdivision of a beat into smaller units was an early exercise of the rhythmic sense, and it is from that that the three-beat time had its origin. When the small boy starts clapping in a crowd the rhythm

usually adopted is  ; but

some more inventive boy varies the monotony by dividing the third beat into three shorter beats, which interests others as a novelty and the crowd joins in. He is but a replica of primitive man. For him the transition from such a subdivision to the use of three longer beats was an easy matter, but as in that subdivision the larger grouping still remained that of two or four. Aside from the song-form in the historical progress of music evidence is abundant in the popular songs that have an appealing rhythm, as most of them do. Very seldom do they have any time more difficult than  $3/4$  or  $6/8$  because difficulty of any kind, rhythm or signature or intervals or harmony, is a great obstacle to popularity. But any larger grouping other than by fours is hardly to be found; it is too puzzling and defeats expectation too seriously.

4. The motor response released by a rhythm is manifested in a variety of ways. It appears in the toning up of the muscles that are used in work or play or marching to accompanying rhythm. It appears again in the tendency to follow along with the stressed beats by tapping of the feet, beating time with the hand, nodding the head or even swaying of the whole body. Such accompanying movements add to the pleasure of the rhythmic experience, though the subject is often not conscious of making them. They are instinctive in their nature and need long continued habit of inhibition in order to be overcome; it is doubtful if they are ever entirely inhibited. The motion synchronizes in its climax with the occurrence of the stressed beat and this coincidence is due to the discharge of nervous energy that attends the stressed beat. Experiments of Wundt and others have shown that there is a process of increasing tension that begins

immediately after the accent and reaches its climax just before the next stress. This latter brings almost instant relaxation, and the process begins all over again. The increasing tension is storing up energy, which is discharged with the stress and the conditions are thus most favorable for some motor response.

Such a regularly recurrent phenomenon is bound to become the basis of a subconscious expectation even before conscious expectation is evoked. The expectation then reacts on the motor response to make it more active and marked and this in turn reacts on expectation to make it more definite. At last a thorough-going habituation strengthens expectation in various directions until a sort of norm is established, existing often long before it is consciously recognized.

5. In order that expectation may become actively operative in rhythm, it is necessary that some such norm, as has been referred to, be established by dint of constant repetition and habituation, though conscious recognition of it as a norm may be long delayed. Granted now that the grouping whether of few or many units be based on twos and fours, the important question presents itself: what sequence of beats within a smaller group, a measure, is the norm on the strength of which expectation becomes operative? In as much as no answer is possible from records of primitive times, we must resort to primitive music that still survives, and to actual usage in the development of our modern system. But before we come to music at all, there was a constant practice of a sort of rhythm that tended to grow more regular, that of the legs in walking. In the very nature of the case the simplest grouping here is of two approximately equal beats, which would be easily doubled for a larger group, making a measure of four approximately equal beats. Any deviation from this succession of equal beats would result either from a change in the mode of walking or from use of the legs in dancing involving irregularities, or from the use of the hands. But when hands began to be used to accompany walking or dancing with clapping, the first impulse would be to repeat with the hands the rhythm already grown common and familiar in walking, and that is substantially what the small boy does in his rhythmic clapping. The subdivision of one of the beats into two or three shorter beats is about the first deviation from the simple norm thus suggested. But this first step results at first in a smaller group of beats that are intended to be equal, whether two or three, and this line of analysis seems to point to the group of equal beats as the norm which forms the basis of expectation. To such a conclusion, however, there seems to rise a strong objection in the available records of primitive music, which show comparatively few examples in which such an even rhythm is used. The force of this objection is weakened by two considerations. In the first place all such music is vocal and is obliged to conform to the exigencies of words which are intended to be metrical in a large way, but in which there is no strict regularity as to the number of syllables in a given metric group. In the second place—and this is of more weight—the peoples of whom we have records are already at a point in the development of rhythm where complicated forms are already in use, and that reacts on their treatment of melodic phrases. But while the melodies themselves are not of the simpler type with equal undivided beats, there is often to be found a drum beat accompanying the singing that is just of the simple pattern. A part of the enjoyment of the melody lies in its more or less free deviation from the pattern rhythm given out by the drums. The following folk songs are good examples of this norm (with slight modifications in some); they are presented in a collection edited by Granville Ban-

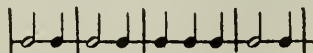
tock.\* "The Vicar of Bray" (No. 3), "The Ash Grove" (No. 15), "Early-Strolling" (No. 22), "In Cellar Cool" (No. 33), The old English song, "I've Been Roaming" is a specimen. Quite a large number of old church chorales, represented in our hymn books by "Old Hundred", "Dundee", "Yorke" and others, and much more frequent in the German church music, are of this normal rhythm of equal beats in the measure. Beethoven has a number of striking melodies of the same type, among them three-beat Scherzos and Allegros of the Second,<sup>1†</sup> Third,<sup>2</sup> Sixth,<sup>3</sup> Seventh<sup>4</sup> and Ninth<sup>5</sup> Symphonies, the theme of the Allegro Vivace of the Fourth<sup>6</sup> (first movement), and the chorale of the Ninth<sup>7</sup> as the voices take it up. In many varieties of music there are passages occurring in which this normal rhythm is strictly followed, the alternating contrast between that and the freer rhythm before and after it being one special source of pleasure and interest.

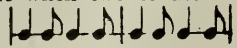
6. Now a rhythm that adheres exactly to such a norm satisfies expectation and affords corresponding pleasure, the kind of pleasure that such satisfaction can afford. That it is not permanently and exclusively pleasurable is proven by the multiplication of minor deviations of great variety and also by the radically different patterns as a whole that have been invented; patterns that cover not only the span of a single measure but an entire group of measures. As indicated above, one of the simplest variations is that which subdivides a beat into two or three equal parts. In the Allegretto of the Seventh Symphony, for instance, Beethoven subdivides the second beat in the odd measures

as follows:  etc. If the chords of

that Allegretto were given with equal beats it would sound decidedly like a funeral march<sup>8</sup>, but the doubling of the second beat adds a lightness to the movement even if it is taken in rather slow time. Variety is introduced later by subdividing into three parts, and by a pitting of twos and threes against each other. The accented beats retain the stress throughout and this type does little more than add the interest of variety without the shock of a surprise. The movement and interest are added to in the rhythm that divides both beats into two equal parts, as Beethoven does in the finale of Sonata No. 6,<sup>9</sup> varying it still more by doubling the number of smaller units at irregular intervals. Mozart does nearly the same thing in the overture to "Magic Flute."<sup>10</sup> These are in two beat and four-beat measures respectively; Sonata No. 1 has in the Trio a like subdivision in a three-beat measure,<sup>11</sup> while the finale of No. 3<sup>12</sup> and the first movement of No. 4<sup>13</sup> break up a  $\frac{6}{8}$  measure into the six units, amounting practically to two beats split up into three each.

In all the modified rhythms thus far mentioned, there is no regular lengthening of the stressed beat, which helps to add to its importance. That is found in a three-beat measure when the first two beats are united on one tone, as in the theme of the first movement of Beethoven's

Third Symphony, ; it is found in the

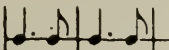
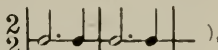
same proportion but on a smaller scale when two of the six beats are united on the stressed note,  as they

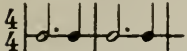
are in so much of music in  $\frac{6}{8}$  time. In a two-beat or four-beat

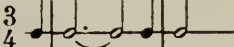
\*Folksongs of all Nations, O. Ditson & Co.

†These small figures refer to music examples on the final pages.




measure three of the beats or subdivisions are united on the first note for a two-beat written thus:  (or ,

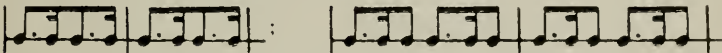
 for a four-beat. This modification interferes more decidedly with the norm, carrying the first tone over the expected beat; until the third beat is heard there is uncertainty, as all three or four beats may be united in the first tone, but as soon as the third or fourth beat is heard there is instant expectation of the next stressed beat, and any interference with that rhythmic sequence would be a decided surprise. Occasionally the time on the stressed beat is still longer, as at the beginning of

the Trio in Beethoven's Fourth Symphony: 

etc.; in this, when at last the short beat is heard, expectation of the next stressed beat is heightened.

The effect of the quicker movement in the first mentioned deviation is often combined with the greater importance given the stressed note by lengthening, and this is a still more radical departure from the norm. In a three-beat measure the effect is as follows:

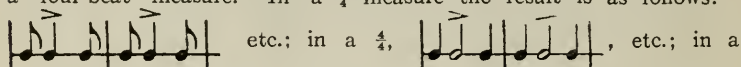
 etc.; in a two-beat measure,



etc. in a  $\frac{6}{8}$  measure. The first is represented in a passage in the Andante of the First Symphony of Beethoven, just before B in the upper parts and beginning at B in the basses ( $\frac{3}{8}$  measure.) The second appears in quite a long passage in the finale of the Seventh Symphony before and after B. The third is used repeatedly in the first movement of the Seventh. The short note just preceding a stressed (or comparatively stressed note) heightens expectation of the latter and makes the sense of the larger rhythm more marked. For this reason—though all unconsciously—this particular type, in one or two beats at least, is frequently used in march music; it is a decided aid in accurate keeping of step. Even the funeral march in the Sonata in A flat No. 12,<sup>14</sup> as well as that in the Third Symphony<sup>15</sup> and in the Chopin Sonata in B flat minor<sup>16</sup>, has parts of measures broken up in this way. In fact, a piece in 4/4 measure with some beats of measures divided up thus is thereby stamped as of the march music type, and is liable to set in motion the marching impulses, just as an alluring waltz rhythm makes the lover of dancing feel the impulse of rhythmic movement. In the regular march movement the first strongly accented beat is not usually broken up; the stress is fortified by the longer time given it. Mention may be made here of the fact often observed that without long continued drill a company of men marching is quite apt to accelerate the tempo by degrees, especially if it began slow. The slight acceleration noted above just before the stress (v. I, 1, above) is increased by this special form of subdivision of the measure and not balanced by a corresponding increase of retardation. The longer time given to the first part of a beat rouses expectation to the point of impatience and hastening on to the stress.

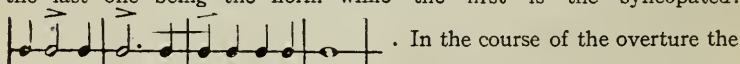
These and a number of other rhythms (which it is not necessary to describe in detail) agree in a fundamental adherence to the norm in this respect that no normally unstressed beat is given the stress;

they can be combined in a great variety of ways, and as a matter of fact most rhythmic patterns used by composers are a combination of several of the above or of them with others yet to be mentioned. So long as the stress is felt on the beat where it is expected there is fundamentally satisfaction; interest there is in variety, but no element of surprise. This enters in the moment a normally unstressed beat is accented, which is done in what is called syncopated time. The simplest form of this is that in which the second beat, normally weak, is accented and held over the normally stressed third beat in a four-beat measure. In a  $\frac{4}{4}$  measure the result is as follows:



three-beat measure, etc.: doubling

the last gives a  $\frac{3}{8}$  measure treated this way. The hearing of the first beat leads to expectation of an unstressed beat to follow, but instead of that we meet suddenly the real stress of the measure, and as compared with any changes heretofore mentioned this gives a genuine surprise. This surprise, the defeat of expectation, is the fundamental and characteristic feature of the syncopated rhythm, and it retains the piquancy and interest growing out of the fact even though we hear it so often that we know definitely what is coming. That is, a piece whose rhythmical character is based on surprise does not lose its interest from familiarity; but that does not imply that the element of surprise cannot be overworked. It is a surprise because the other rhythm is the norm and the staple. If now for the sake of attaining piquancy and interest we turn the surprise into the staple, trying to create a new norm, then by the very nature of our minds it ceases to surprise, loses the very piquancy sought. Instead of being used as a means to higher aesthetic ends it is really sought as an end in itself. Eventually that which is now the norm will be introduced to give interest to a jaded appetite. The economy exercised by a master like Beethoven in this matter is instructive even for a student of the psychology of music. He uses syncopated time with entire freedom but remains its master. In the theme of the "Lenore" overture, he gives in three successive measures three contrasting rhythms, the last one being the norm while the first is the syncopated:



syncopated measure is repeated about ten times in succession, working up to a climax in which the theme is heard again with its quota of normal time. We are not allowed to forget the normal in the interest of the surprising. He also treats the melody of the chorale in the Ninth Symphony by syncopation, omitting the stressed beat repeatedly,\* but later he takes it up again with strong normal rhythm.† But even when a composer uses a quasi syncopated rhythm throughout a piece, as Mozart does in one of his quartets, it is manifestly for a special aesthetic purpose; for it stands alone in all his vast range of creative work. And yet he, too, resorts with some freedom to syncopation. The

time in that quartet‡ is as follows:

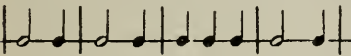
\*Alla Marcia, in Finale, between N and O.

†Ibid. at R.

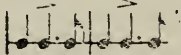
‡Trio, Quartet No. II.

which is quite a different type from that in the "Lenore" overture; here the norm calls for full time on the stressed beat while the surprise is caused by the stressed beat being much shorter. Much Scotch and Irish folk music has this peculiar rhythm. Other nationalities have adopted a sort of syncopated rhythm in their folk music. The Hungarian has a good deal of the type described above in the "Lenore" overture in a  $\frac{3}{4}$  measure, but by no means exclusively of that kind. Spanish dances in a three-beat measure often have syncopated measures. It remained for music in the United States to develop an almost exclusively syncopated type of rhythm with the not very descriptive name of ragtime. Some have risen in its defense against charges of insincerity and inanity and claim for it real artistic value as well as a fresh piquancy characteristic of the country. From the psychological standpoint pure and simple—into the other controversy it is unnecessary to enter—ragtime is without doubt open to the charge of overworking the element of surprise in its rhythm. Piquancy is sought as an end in itself, and as suggested above, the surprise is in a fair way to become the staple and cease to surprise; in that case piquancy will result from occasional return to the norm. The cycle may even be completed and the saturated ragtimer try to regain a lost piquancy by using the neglected norm so freely that it again becomes the staple.

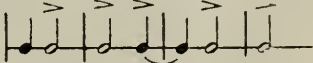
One syncopated rhythm still awaits mention, that which arises from the sudden substitution of one more or less exact norm for another temporarily, the effect being that in the rhythm that is displaced from its right of way an unstressed beat suddenly takes the accent and upsets expectation. It often happens that the listener is obliged to wait a measure or two (or even longer) before catching the new rhythm. In the first movement of Beethoven's Third Symphony a three-beat measure undergoes the following changes:

 represents the starting rhythm of the

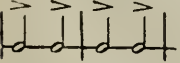
theme; it is doubled in time, , etc.; out of

that emerges a partly syncopated effect ; then suddenly

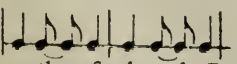
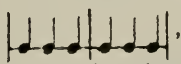
ly the short eighth note is omitted and the accented beat is held to the end of the measure, the rhythmic stress begins the next measure, but the third beat now is stressed and held over the normal stress

of the next measure, being written thus: 

and in effect interrupting the modified three-beat measure by substituting a strongly marked normal two-beat that might be written thus:

,\* etc. Similarly Brahms in his song "Von ewiger

Liebe" changes a  $\frac{3}{8}$  measure into a  $\frac{3}{4}$  measure as follows:

 equivalent to , etc. Again,

in the finale of Beethoven's Sonata No. 17, about half way in the first section a  $\frac{3}{8}$  rhythm is replaced by one equivalent to  $\frac{3}{4}$ .<sup>17</sup> Such substitutions are surprises in their very essence and subject to

\*After G in recapitulation; also early in first section.



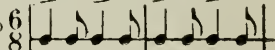
the same psychological limitations as all syncopation in rhythm. They lose their effect as surprises and fail to interest either if they are carelessly, mechanically used, or if the device is worked too hard.

7. In spite of what has been said above of the syncopated rhythm, it must be admitted that the sense of rhythm, both separately and as conjoined in music with melody and harmony, is long-suffering, far more so than either of the other elements. A body of men, after a long march during which the drum has been tapping regularly its

monotonous time , still respond to the rhythm

and march better with it than if they were allowed to straggle along. But that tapping stands for the norm of a four-beat measure, the missing beats being supplied in the consciousness of the marchers. And the same fact holds true in music. Provided the melody and harmony furnish material of interest the normal rhythm can be maintained throughout and still be effective at the end. In fact, provided the rhythm is strongly maintained a weakness of melody or harmony may be helped out. And whatever may be said as to those two elements in the popular ephemeral songs and dances of the day, at least these have an appealing rhythm; and many a song that is lamentably weak in both melody and harmony—commonplace and utterly conventional as well as insincere—has beaten its way into a brief vogue by its strong rhythm.

But this fact is paralleled by another equally striking. A rhythm adopted by a composer as the time substratum of a certain work, may likewise be repeated and maintained unchanged to the end without causing a sense of monotony, providing again the superstructure of melody and harmony is worthy and well handled. In the Allegretto of the Seventh Symphony referred to above (6 above), the rhythm adopted, a simple modification of the norm, is sustained practically unbroken to the end, covering five pages in piano score; melody and harmony meantime having changed radically. Again, in Sonata No. 19,

the finale has a stirring rhythm, equivalent to 

with most of the beats subdivided, and with few pauses this remains unchanged to the end, while new melodic subjects and various modulations come and go.

Now it would be impossible to maintain interest, to avoid the effect of monotony, if either a melodic subject or a chosen harmonic sequence, no matter how entrancing they might be in themselves, were simply repeated practically unchanged to the end of a piece. The few exceptions that might be named, such as the old time musette or some more modern imitation of that, or cradle songs, like Chopin's *Berceuse*<sup>18</sup>, the avowed object of which is a certain soporific monotony, are evidently nothing but exceptions with a definite aesthetic purpose. This marked difference between rhythm on the one hand, and melody and harmony on the other, finds its explanation in the more marked somatic reaction of the former. To quote briefly from Dr. Seashore\*, "rhythm not only adjusts the strain of attention, it also gives a feeling of balance, a sense of freedom and power; it stimulates, and at the same time lulls."

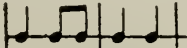
A large share of what somatic resonance results from melodic phrases and harmonic sequences is to be credited to the rhythm in which they are embodied. Present the same sequence of interval or harmony in a haphazard irregular way, and most of the effect they

\*Psychology of Musical Talent. pp. 118-123.

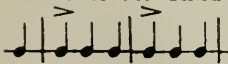
once had is dissipated. The mere auditory image of a stirring march melody loses out in stimulating effect in the effort to single out for separate thought devoid of any rhythmic sequence the chords and intervals that are in its actual movement. Such an experiment with the "Tannhäuser March," for instance, is very instructive on this point.

The ragtime and "jazz" movement seem to be an instinctive effort to renew interest in rhythm by special devices that have a startling effect. The interest in rhythm as such, is evidenced by the attention attracted by a drum corps with its many varieties of groupings, by the clapping of flat pieces of unmusical wood in a band or orchestra, tapping with light sticks, almost anything to accentuate the rhythm. Without any abatement of what has been said as to the psychological unsoundness of the device of surprise as an end in itself, of its too constant use, it must be admitted that the jerkiness and sudden transitions in rhythm of "jazz" bear a striking resemblance to the rhythm of certain prose sentences with their sudden changes in the grouping of syllables. The sentence from Walter Pater, selected by Patterson\*, is soothing in comparison.

8. In the opening measures of a work of music the composer sets forth a rhythmic grouping, which serves as a pattern for the listener, which is consciously or subconsciously present as a basis of expectation and comparison to the end. Because of the well understood use of repetition in composition, not only is there expectation of the return of the pattern a number of times, but as soon as the first few tones of it are heard lively expectation is excited as to the sequence within the pattern. Even though the melody and harmony suffer considerable change, the rhythmic pattern is expected, and repetition does not weaken its effect. Because of the constantly renewed somatic response, the pleasure of satisfied expectation with which it is greeted can suffice without change almost indefinitely. And composers have counted on it and do count on it. The frothy popular songs and dances that keep the market well stocked depend on it, and if their melodic and harmonic content is more nearly on a level with the rhythmic they enjoy a longer lease of life.

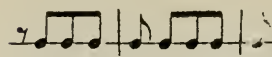
The Allegretto of Beethoven's Seventh Symphony, already cited, starts out with the pattern: ; it is on a two measure


scale, and is heard throughout the movement. Expectation here joins hands with somatic resonance in securing the pleasure in this phase of it, and it is fresh still at the end. The same composer in the Scherzo of the Third Symphony, gives a vigorous three-beat rhythm

 etc.; but makes the general pattern of twelve

measures irregular to the extent of inserting two extra measures, interrupting the expected flow by fours. That pattern is the basis of expectation, and its own deviation from the norm of twelve or sixteen, together with the deviations introduced later, are part of the jest (Scherzo) played on the listener. But one of the most remarkable examples of a persistently repeated pattern is in the first movement of his Fifth; in this a single measure suffices. It begins on an unstressed subdivision of the first beat of a  $\frac{3}{4}$  measure and ends on the stressed beat of the next measure. As announced this last beat is held, but as it is taken up and developed it has the following figure:

\*Op. Cit. p. 62.

 , etc. But again, it is given in such quick tempo that the stressed beats group themselves in a larger scheme of both rhythm

and melody, the former with this effect:  <sup>19</sup>

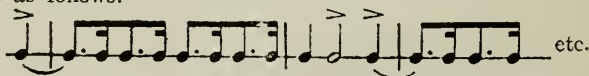
which is also used repeatedly in the movement and stands out clear through the subdivision of the beats. It even reappears only slightly modified in the second subject, which also has close kinship with the

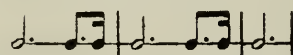
melodic phrase involved:  . Every time one of

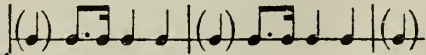
these patterns begins with its characteristic three short notes and a stress—as if some one were knocking—we have clear expectation of the entire sequence, and should experience quite a shock or surprise if its career were suddenly checked; and it is to be doubted whether it would be a pleasurable surprise, the only justification. The pattern of the "Lenore" overture (referred to above) has more of variety with a be-

ginning in syncopated time:  . Each

return of that syncopated measure arouses expectation of the rest of the pattern, and while there is far greater variety (a series of syncopated measures in quick succession, subdividing, and other changes of interest to the listener) the entire pattern is heard over and over again. Schumann begins the finale of his Quartet in A with an unusual and striking rhythm lasting two measures. By repetitions, with decided changes of melodic and harmonic sequence, he extends it into a period of fourteen measures, the exact rhythm with dotted and syncopated notes recurring seven times. Six times in the course of the movement the same pattern is given unchanged, each time following contrasting material; at the first announcement of each we are confidently expecting not only the two measures that make up the pattern but the entire series of seven pairs of measures. Twice he stops at the eighth measure, and at the end in a sort of coda he enlarges on the pattern with further melodic material leading into a rising cadence. The pattern is as follows:

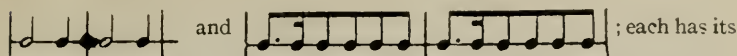


In the *Cujus Animam*, from the "Stabat Mater," Rossini has maintained the pattern he set at the beginning almost unchanged to the end:  , etc.; and he further accentuates

the march-like rhythm by breaking up the longer note in the accompaniment:  , etc. The occasional

departures from the pattern serve but to strengthen expectation of its consistent return unchanged.

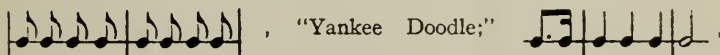
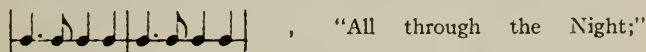
It is not at all uncommon to have two concomitant rhythms which divide attention somewhat as two voices in polyphonic harmony (V. III, 3, below), and each starts its own series of expectations. Thus Elgar in the "Dream of Gerontius" has on page 2 of the Prelude, the following two patterns in the upper and lower parts respectively:

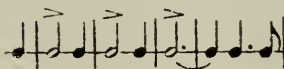



own modifications that move quite independently; each reappears a number of times through the work (not always conjointly), and in every case renews expectation, which is not always fully met, i. e., a new variation adds interest, while the harmony is also shifted.

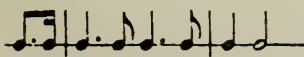
In the ultra-modern composers there seems often to be a disinclination to set any clear rhythmic pattern that can be followed easily, even by trained listeners, though close analysis would in many cases reveal a subtle undercurrent, which amounts to a pattern. But for the uninitiated the effect is more of bewilderment than pleasure; there is no chance allowed for the releasing of any expectation. And frequently, when there seems an opening and expectation begins to operate, it is followed by a state of mind that is less a pleasurable surprise psychologically than a painful thwarting, a genuine disappointment.

Folksongs and other pieces of a popular nature have their rhythmic patterns, often so marked that the mere tapping of the rhythm will suggest the melody; and here, too, nationality has its differences. The following may stand as representative of this type:



"Star Spangled Banner," , etc. Strauss

waltz; , "John Anderson" a specimen of what may be called a double pattern;

, "Annie Laurie." The slight variation

preceding or attending a cadence or cadence-like pause, is not of the nature of a surprise, but is quite in keeping with expectation.

In bringing this study of rhythm to a close, it is in place to remark on the presentation of the subject. Neither here nor in the subsequent studies of melody, harmony and form, was it the intention to prepare a complete statement that should be exhaustive in detail of all the numerous ramifications of expectation. An entire paper of this extent would not exhaust the subject of rhythm alone. It has been the purpose to make a representative selection of material and point out by analysis the constant and essential operation of expectation in rhythm. Nor was there any intentional implication that expectation in connection with rhythm was dissociated in music as ordinarily experienced from that growing out of melodic or harmonic sequence. The elements mentioned are separated only for psychological analysis, even though indissolubly bound together in fact. Especially is this true of melody, a union of rhythm with interval, which is practiced apart from harmony by far the larger majority of the earth's population. To them melody without the explicit harmony of occidental music is a reality, a thing of beauty and a joy forever. But any attempt to incite interest in melodic sequence that is entirely free of any rhythmic tie, a haphazard connection of intervals with arbitrary

time for each, would prove the necessity of some kind of rhythm that shall group the intervals so that they require some sort of coherence and meaning. It may even be that the subtleties of modern harmony are accountable, in part, for the indifference to rhythmic patterns, referred to above. Such an attitude would certainly not be tolerated where melody in its freedom from explicit harmony is the only music known.

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## II. EXPECTATION AS IT APPEARS IN MELODY.

### 1. Origin of melody.

Turning now to the phases of expectation that spring from melody, let us raise first the question as to the origin of melody. In the absence of all records we can at most but set up plausible conjectures from careful study of the most primitive forms of music now in existence and from the observation of the efforts of children, who furnish much instructive material. Fruitful suggestions may be gathered from a study of the process by which children gradually acquire voluntary control of movements of limbs. There must precede a long period of random movements which are largely (if not wholly) reflex reactions on a great variety of stimuli, and serve along with vocal utterance as a vent to feelings of varying tone and intensity. Then ensues a period of tentative effort at voluntary movement when an object is aimed for but missed by a wide margin. Then repeated effort improves the aim until finally a single direct movement is all that is needed. The same process may be observed in the control of the vocal organs. At first the cries and screams of pain or delight are without purpose or control, mere reflex responses to different stimuli. Gradually the infant learns that certain exertions of the vocal cords result in the satisfaction of hunger or soothing of pain, and it makes use of the lesson thus earned. During a long subsequent period it tries out the larynx in various ways without intent to either convey meaning or imitate. Then follows more or less conscious imitation, before long with voluntary effort to put some meaning into the sounds, and finally closer imitation until we hear the germ of a word. Usually the effort to imitate musical intervals is postponed several years, but in exceptional cases children under two years of age have reproduced melodic phrases correctly; this simply evinced exceptional organization, a peculiarly fine co-ordination of the auditory sense organ and the mechanism of the throat.

From the inmusical efforts of primitive peoples, which have been carefully studied in phonographic records, we gather that the earliest melodic elements were the simplest intervals; but even the most primitive imply a long antecedent period during which these intervals were gradually selected out of the many sounds which men discovered themselves to be capable of producing. Long before that their feelings under different degrees and kinds of excitation found vent in multitudes of groans and whines and outcries and calls and screams and roars and gurgles and laughs and other sounds. Before the development of articulate speech, when such sounds as the above were depended upon for what little communication existed between individuals and groups, a considerable variety and shading of such inarticulate utterances must have grown up, more than were subsequently needed. As a dog notes the difference between a play growl and the real thing, when it may escape the human ear, so the slight modifications would serve to convey differences of feeling. Now, of course, all these vocal efforts conformed to the laws of sounds produced at the orifice of a tube as they have since been formulated by physical science; and there is no reason to suppose that the bodily constitution of man, the human organism, has undergone any essential changes,

that would affect the production of tone, from that day to this. It is to be taken for granted that then, as now, the high tension induced in the vocal cords by great intensity of emotion resulted in tone of high pitch, and a change in the emotional intensity would change the pitch of the tone and the result would be an interval. The range of such intervals is limited by the very nature of the vocal mechanism and there are two sets of range in the male and female voices respectively. Out of the various intervals accidentally hit upon in the involuntary (or partly voluntary) sounds some were felt to be more fitting or satisfying as a vent to excitement of feeling than others, and this preference gave rise to a process of gradual elimination and selection, until certain intervals like the 5th, its complement the 4th, and the 3rd, were heard so frequently as to receive a sort of recognition, of custom alone at first. In the most primitive melodies of which we have any records there is no thought of the quality of tone, which is nearer the howl of a cayote than anything else; but there is clearly discernible the labored purpose of the howler to produce certain intervals, the 5th and the 3rd. While music, properly speaking, as conscious art, can hardly be said to have a beginning until the voluntary effort was made to repeat a series of such intervals at a different pitch—an achievement which no animals seem to show even the impulse to attain—there might very well have preceded a series of intervals truly deserving the name melodic, but as yet without the impulse to keep the same intervals in the same succession at a different pitch.

## 2. Control of the simpler intervals in singing.

When definite intervals, such as the 5th and 3rd, were well established and in common use, they already served to give rise to a series of simple expectations. This would appear clearly in one peculiarity common to primitive music, namely the falling cadence. The melody almost invariably begins on a high note; if it happens to be the fifth—as it often is—the voice would descend occasionally to 3rd or to the tonic, and eventually come to a close on the latter. Accordingly when the melodic phrase began, the feeling as a matter of habit that it was the fifth leads to the anticipation of the 3rd to follow. This tone being heard the expectation may be said to be divided between the possibility of a return to the 5th and a descent to the tonic. But at any point before a manifestly concluding cadence the descent to the tonic would immediately rouse expectation of a rise to the 3rd or 5th again. And thus these three tones would be played off one against the other with slightly varying degrees of expectation. The opportunity for heightening expectation would be chiefly in postponing a tone that would be normally next in order; but both this and the chance of surprising are manifestly rather limited. But of one thing the listener was entirely confident: he expected the voice to fall to the tonic in the cadence. Whether a soloist or composer ever even conceived the possibility of disappointing his audience on that point we can with high degree of probability deny; it implies too self-conscious an attitude at that stage of the art. But some time in that dim past a venturesome composer surprised his audience by letting his voice rest half-way between the 3rd and the tonic, and probably gave some of them a marked pleasure by the surprise of the intermediate step. Some considerable time must then elapse—as in similar circumstances it always has elapsed in later stages of progress—before such an innovation received the recognition it merited. But as it gradually made its way into the ears and hearts of the community it gave room for great expansion of expectation and consequent aesthetic pleasure. On hearing the 3rd, for instance,



the primary expectation now would be of a descent to the 2nd; as this amounted in its origin to a postponement of the inevitable tonic—with increase of final pleasure—so now the descent to the 2nd itself can be postponed. The same device can be resorted to in passing from the 2nd to the tonic. It is not intended to imply that all this was consciously done with malice aforethought by the primitive composer; this is simply our analysis of why he found enjoyment in that movement of the melody. If now the melodic phrase happens to begin with the tonic there is an added possibility in the ascent to the 2nd as an alternate, and that heightens expectation of the 3rd to follow. By repeating 2 we make the effect of postponing 3 and intensifying suspense of expectation, or nearly the same effect is obtained by raising the melody to 5 before it passed to 3. With this heightening of expectation also comes the opportunity of a more decided surprise with its peculiar aesthetic effect.

All these opportunities are increased in geometric ratio by the discovery of the next interval to be introduced, the 6th. This resulted in the pentatonic scale, so-called, to the analysis of which we may now devote a few paragraphs.

### 3. The pentatonic scale.

The five-tone scale, with the tones 1, 2, 3, 5, 6, is so widely distributed geographically, and in countries having no intercommunication, that it may well claim to be a necessary stage in the progress of the art of music. To the intervals before possible, it adds one more fourth (3-6), a minor third (6-8), and a fifth (2-6). This manifestly adds to the number and variety of expectations that may spring up, but more significant still is the far greater opportunity for intensifying expectation, and preparing a possible surprise. It is evident from the extent to which 6 is followed by 5 in pentatonic melodies,<sup>20</sup> that this represents a sequence for which there is a special call, so to speak. It indicates a sort of melodic dependence of 6 on 5, as if the former afforded no resting place in itself, and 5 were the natural tone to pause on. The interval from 3 to 6 is frequent and evidently grateful, but the reverse step is far more rare; though the movement from 3 to 6 through 5 as an intermediate step, is of very frequent occurrence, either at the beginning of a melody, or as a phrase in the course of it. It amounts essentially to a pleasing variation on the interval 3-5 with a heightened expectation of the latter after the dependent 6. The ascent from 6 to 8 (the tonic octave) is never by way of a cadence, doubtless because the absence of the leading tone (7) creates too little expectation. This movement (6-8) is found when the melody passes in an episode to the octave and beyond. In the return to the lower level the pitch of 6 serves as an intermediate step between 8 and 5, and again heightening of expectation results with keener pleasure. But postponement may be further added as a means of creating still keener expectation.

There are two important innovations that seem to have been introduced in the pentatonic period. The first appears in the frequent use of a lower pitched tone as the beginning of a melody, and hence more frequent movement of melodic phrases upward than before. Another lies in the use of the 3rd in a cadence as a substitute for the tonic. The latter must have come at first as a delightful surprise, and it constitutes an important change, not only in setting the melody free from the tyranny of the tonic cadence, but in the new psychological effect secured: it has a more calming effect than the tonic.

The ascent of the melody to the region beyond the octave at once rouses keen expectation of return to the octave—preferably through the intermediate 9—and from there to the resting places of 5, 3 or tonic. Here again is fine opportunity for postponing the inevitable or evading it as a surprise. One frequent method of postponing is the repetition either of one tone before that which is expected to follow, or of two or more. For from the octave ultimate descent to a lower pitch is indispensable as yet for a cadence; there is no leading tone to make a rising cadence to the octave seem inevitable.

#### 4. Greek Modes.

Before the modal system of the Greeks was possible, two more tones were added between the tonic and its octave, thus making the full complement of tones in our diatonic scale. These are the 4th and the 7th, or leading tone. The interval of a fourth had been represented even before the pentatonic scale, which added another, but neither of these had that relation to the tonic. Each of the new tones adds a third to possible intervals; 4 adds a minor third (2-4), and each furnishes a semitone (3-4, 7-8), which so far had been lacking. This is of great significance for our purpose as the expectation of a tone separated only by a half step from the preceding, is far more definite than of any other tone. Although the ground seemed all ready, the material all on hand, for the creation of harmony, the Greeks somehow failed to make the necessary start. But they felt the need of a greater variety in the expression of emotion and built on a feature of the pentatonic scale that has already been mentioned: substituting the 3rd for the tonic in a cadence. They carried it to the extent of substituting any tone of the scale for the tonic, not only in a cadence, but as the real fundamental of the entire melody. Each new fundamental sets the semitones in a new place and furnished great differences of emotional value. Another consequence of vast importance was that in addition to three scales in which the first three tones were identical with the diatonic (pentatonic also) they secured three others in which the interval of the third was less by a half step, i. e., three minor scales, beginning on 2, 3 and 6 respectively. The last of these is the nearest approach to our modern minor—identical with it, in fact, for five consecutive tones. It is a fact of incidental interest that our modern diatonic scale was not in high favor among the Greeks, who charged it with being effeminate in its effect. But the point that concerns us most here is that in so far as any one of these modes was used for the composing of melodies, after they had been commonly recognized, each had its own peculiar series of expectations founded on the relation of the several tones to the one chosen for fundamental of the particular melody. The location of the semitones in each several scale made marked differences in the expectation in melodic phrases. The expectation of a cadence returning to the chosen fundamental (or related tone) was nearly as definite and strong as for our diatonic scale. Since aside from some of these peculiarities expectation follows largely along the line of our diatonic and minor scales, we may well leave further analysis to the discussion of those scales.

#### 5. Whole-tone scale.

The whole-tone scale in use in Siam need not occupy us long. It is evidently an artificial construction on a theoretical basis and is witness to the fact that the human ear can accustom itself to strange, even abnormal intervals. In this scale there is no interval correspond-

ing to our fifth or fourth, only approximately what we call an augmented fifth or fourth. On the other hand, it abounds in major thirds, each successive tone of the scale having a tone at such an interval above it. It is hardly necessary to say that no harmony based on degrees of fusion is possible, for just as soon as we leave the third every other interval (except of course, the octave), is what we term a dissonance, and two dissonances are not like two negatives in neutralizing each other. The use of a similar scale in some of DeBussy's compositions, and the favor they seem to find in some quarters, are further evidence of the possibilities of habituation. But that composer, while he depends on mild blends of discord so constantly as to amount to a pronounced mannerism, very skillfully avoids the harsh combinations that grow out of the scale. But the Valkyries of Wagner would be in their element in the whole-tone scale, dividing the octave as they do into three equal parts. Any deviation from the full step or full major third would involve a semitone, which would be a distinct surprise; also the interval of a fifth or fourth. Again, aside from these peculiarities, there would be expectation in certain fundamental and general forms very much as in the diatonic scale, to the analytical study of which we now pass on.

## 6. The Diatonic Scale.

It will be simpler to deal at first with the major scale, leaving the minor for separate treatment. There are three preliminary considerations that need to be borne in mind.

a. A melody may be direct in its progress or it may be circuitous. That is, it may include only tones that are essential, omitting any transitional or ornamental tones that either fill out an interval, or are of interest as affording a sort of variation; or, on the other hand, it may employ many such tones, which often give the effect of finish, but often are nothing more than padding.

To the first type belong large numbers of church chorales and simple melodies of many composers. The fact that many a melody which would be unattractive in its simple or crude form<sup>21</sup> becomes charming with the appropriate finish, does not alter fundamental expectation in the least.

b. The direction of expectation, whether to a tone below the first tone of a melody or above it, depends largely on the absolute pitch of the latter. In general, the lower this is the less will the melody be expected to descend on the next following tone; while correspondingly the higher it is the less will the melody be expected to rise on the next tone. In primitive music (as above noted) it is quite common for the melody to start on a high pitch, even the highest tone that appears in the melody at all, in which case a descent to lower tones would be definitely expected. Since all such music is vocal, the range of the voice has much to do with these conditions.

c. In modern music there is the far greater range of instruments that affects the situation regarding expectation of tones to succeed the first, and naturally in all succeeding movement of melody. As a full discussion in detail of all these possibilities would lead us too far afield, we must content ourselves with a sort of average, making due allowances for limitations or extensions according to circumstances.

a. For the sake of following some natural order, we may consider first melodies that begin with the tonic. If this is of rather low pitch a higher tone will be expected to follow. But certain general restrictions may be noted. Any tone beyond the octave would be felt as a distinct surprise, the higher the more of a shock. Within the octave 7 would be least expected, especially for essential melody, though it would be less of a surprise as a mere transition. Of the remaining tones of the

scale 4 and 6 have a less degree of expectation than 3, 5, or 2, and these three are not far apart. The octave is hardly expected, unless it be as an essential after some transitional tones. Of the lower octave 7, only a semitone removed from the tonic, has about the same degree of expectation as 4 and 6 above, while tones of still lower pitch—like 6 or 5 below the tonic—recede in degree of expectation, principally because with the voice they reach nearer the limit of range. If now the melody begins at the octave there is quite a change in the situation. The 7th then may readily be anticipated, though not quite as easily as 5; 3 is not far behind; then next in degree of expectation follow 6, 4, 2 in that order. The tonic, at the remove of an octave, is less within the range of expectation, while any tone below would have the effect of a surprise, as much so as the corresponding leap upward when the melody began with the tonic. As the tonic is higher in pitch, in other tonalities, certain analogous changes of expectation would result.

This is as convenient a point as any to consider a question that may already have risen, namely, how does the listener know on hearing the first tone of a melody whether it is the tonic or any other? Nothing can be definitely settled until the next tone or several tones are heard, and a succession noted. The answer is that the ear accustomed to melody has quite a definite series of expectations with regard to the first tone, which then react in turn on the next to follow. As presented here, the statement of this series is based on an actual examination of over two thousand melodies, ranging from Bach to Grieg, Brahms, Liszt and Saint-Saens in time, and including all classes of music. Fugitive pieces, suites, sonatas and symphonies, as well as chamber music in sonata form, represent the instrumental melodies; while for voice, there were included folksongs (some as far back as the thirteenth century), chorales and other church melodies, anthems, cantatas, oratorios and a variety of songs. The results of this statistical investigation differed in certain details from *a priori* judgment but confirmed it in the main. Of the melodies inspected over 96 per cent. begin with one of the three tones of the tonic chord, i. e., with 1, 5 or 3. Because of the importance of the tonic in our modern system, especially from Bach down, I had fully expected 1 to stand in the lead; as a matter of fact, it is in the lead in the works of Bach so far as examined, nearly twice as frequent as 5 in the organ works, and in about the same proportion in the preludes and fugues of the "Well-tempered Clavichord." But in his lighter pieces and suites for piano there are more of 5 and 3 in proportion, and in subsequent composers 5 is far in the lead as compared with 1. But one point seems to be conclusively established, namely, that the first tone of a melody is expected to be some member of the tonic triad, and in that triad 3 is less expected than 5 or 1. The latter two together make up slightly over 75 per cent of the total, while 3 is 21½ per cent—with a tendency to increase in the modern music. The tone 5 increased heavily over 1 in later music, so that in the totals it shows just about 40 per cent as compared with 35 and a fraction per cent for 1. In music since Bach this proportion would be not far from 43 per cent. for 5 as against 32 per cent for 1, or about in the ratio of 11 to 8. We may fairly regard the actual usage of composers as reflecting the mental attitude of the music-loving public, and on the basis of the above statistical study the inference is that the first tone of a melody is in general expected to be a 5 or 1 or 3, in order of degree of expectation—1, of course, including 8, as both the others include their respective octaves. In this conclusion it is not necessary to include any consciousness on the part of the listener of what he expects,



as, in fact, much of expectation in all musical experience is subconscious. Of the remaining tones of the scale, 6 and 2 are just about equally frequent; half as frequent are 7, 4 (about equal to each other.) That is, the accustomed ear would expect the first tone of a melody to be any other tone of the scale before 4 or 7. To this may be added three remarks. First, in any case of repetition of the melody, there is at once renewed expectation as regards initial tones. Second, the degree of expectation of any initial tone unites with that of the next following to heighten expectation of tones in later succession. And third, in a vast number of cases a prelude or previous setting gives sufficient indication of tonality to fix expectation. But what was predicated as to expectation regarding the initial tone must not be understood as implying that ultra modern composers observe that order; merely this, that in so far as they deviate from it, at the present stage of musical development of the average audience, they excite varying degrees of surprise. There are certain outside limits, however, more or less vaguely defined, beyond which not even the boldest dare venture. No writer for the piano, for instance, would begin a melody with either the highest or lowest tone of that instrument, nor would a writer for the voice compel the performer to strain the vocal cords to the limit on the initial tone of a melody. It is hardly necessary to say that I cannot include, when speaking of expectation as developed in melody, those composers for whom melody in general is an evidence of reactionary tendency in music, and who never deign to introduce genuine melodies at any point in their compositions. The future may be theirs; the present certainly is not. From the extreme limits above indicated, for piano or voice respectively, we might move up or down toward the central range of each, and finally reach a tone which would mark the outside limit of adventure in beginning a melody, the greatest allowable shock of surprise.

But it is possible in our system of music to go outside of the list of tones in the scale to continue a melody; we can resort to the semi-tones between consecutive whole tones of the scale. The term "accidentals" used for these as they occur in music, is in so far appropriate that such a semi-tone is almost invariably not an essential tone in the melody, but a transitional tone preliminary to the next following tone of the scale which is essential. Here again, the extreme modernists, with their disregard of tonality, are a law to themselves; but they cannot legislate for an unsophisticated public nor for psychological analysis. A study of their work along the same line as the present cannot be undertaken until a constituency is habituated to the point of really developing expectation of a new kind.

But all these expectations are readjusted when the initial tone of the melody is other than the tonic. In case it is 2, with a tonic of low pitch, expectation of 4 and 6 stands on a higher level, though not as high as that of 3 or 5 or the tonic. The 7 below the tonic may readily be anticipated, not so readily the octave 7 or 9; while farther leaps would be more surprising. In proportion as in other tonalities 2 has higher absolute pitch, we find changes corresponding to those above suggested when the tonic is higher. Tones below the tonic are brought within the range of expectation, while tones above the octave recede in the same proportion. What was said above on semi-tones applies equally in this case; and it should also be noted that 2 as the initial tone of a melody is frequently non-essential.

The 3rd, being a member of the tonic triad, very frequently begins a melody. When the tonic is of low pitch, expectation of the next following tone would bring the other tones of the scale in approximately the following order: tonic, 5, 2 (these three with little divergence), 4, 6 (not far apart), next the octave and \*7 below tonic, and last

7. Other tones below the tonic and those above the octave recede in proportion to distance. 2, 4 and 6 are far more frequent as non-essential than otherwise. The relation of the accidental semi-tones is somewhat altered here. 2# and 1# are felt to be satisfactory, though less so as essential tones; 4#, 5#, 6# are about at the limits of the range of expectation, even as non-essentials, 5# and 6# being unexpected because they seem to be preliminary to dependent tones, 6 and 7; yet the same two may be taken as 6b or 7b respectively, in which case the former rises in degree of expectation. When the tonic is of higher pitch further tones below come more within range of expectation. So the 5 below is of very frequent occurrence as the second tone of a melody beginning with 3. Other tones of the lower octave recede as in cases above in proportion to the span of the interval, and the same is true of the upper octave.

Assuming next 4 as the initial tone, 3 is the tone most definitely expected to follow, largely because of the half-step at that point in the scale. Next to 3 in range of expectation come 6, 2, 7 (below the tonic), the tonic or its octave, then rather low in degree of expectation 9, 7 and 5 last. There is here a marked re-adjustment of accidental semi-tones; some that follow 3 or the tonic quite naturally are in this instance on the border line. And hardly any can follow as an essential, and not more than two or three as transitional (5# as leading to 6, 7b with the same tendency, 1# leading to 2). But one peculiar feature is the barrier that seems to separate 4 from 5 as initial and second tones of a melody. I do not now recall any such beginning of a melody, though 5 may serve as transitional to 6 or even 3. Doubtless the status of these two tones, 4 and 5, as bases of two of the major triads in the scale has some influence. As the tonality is transferred to a higher pitch the 5 below is quite possible, the 4 then taking its place in a dominant chord as 7th; 6 of the lower octave is easily in range. Lower tones as well as higher follow about the course indicated in the case of 3 and 2 as initial tones.

Coming now to 5 as initial tone, with tonic of low pitch, we find a situation differing totally from that of the last-named assumption. In this case the tonic or its octave, 3 and its octave, may any one of them follow with about equal ease of expectation, while the next group is not far behind, viz: 2 and 7 either above or below the tonic, 6 and 4. Two peculiarities of 5 stand out here. First: the melody can pass from it to 4 with ease and satisfaction, but cannot reverse the movement at the beginning. And second: this tone, 5, is the most indeterminate initial tone of a melody that can be chosen. It belongs to the tonic triad and is itself the base of the so-called dominant triad, which includes the leading tone of the scale, and also builds with 4 (above octave) the dominant seventh chord. Thus it looks in all directions from a sort of central eminence and no one can tell which way the melody starting there is going to leap. Moreover, all the accidental semi-tones follow readily, even in some cases as essentials, in the same degree of expectation approximately as the nearest tone of the scale. As the tonic is higher in pitch (in another tonality) the tones below it rise more above the threshold of expectation until 5 is reached, i. e., the lower octave of the initial tone itself; beyond that there is little expectation. If the tonic is high enough (and often even when it is low) 5 below is frequently used for initial tone and has a wide range of choice within the range of an octave; beyond that the leap would occasion surprise. The tonic itself is of most frequent occurrence, 3 either above or below follows close behind, and 2, 6, 7 and 4 (the last either above or below the tonic) do not lag far behind. The accidental semi-tones stand in about the same order as when 5 above the tonic was the initial tone.

After what was said about the dependent character of 6 it will be readily seen that the position it occupies as candidate for the initial tone is wholly different from that of 5. It is practically a non-essential that tends either down to an essential 5 or up to an essential 8 (through 7). The melody may rise to 7 quite readily or descend to 2, or 7 below the tonic. The latter and 4 have about equal expectation, 3 a little less, but 9 and 11 (all above the octave) are readily anticipated. These latter recede as the pitch of the tonic rises, while 6 below (lower octave of the initial tone) comes within range. But in both cases 3 or its octave 10 are rather low in degree of expectation, doubtless because they are too suggestive of the minor, where they become the corresponding equivalent of 5 of the major scale and are accordingly high in degree of expectation. The use of accidental semi-tones after 6 remains fairly free, but they are almost invariably transitional, heightening expectation of the next essential melodic tone to follow, which it merely postpones just so long.

The remaining tone of the scale, 7, is even less used than 6 as an initial tone of a melody, and is just as apt to be a non-essential. The tone most definitely expected to follow it is the octave, a semi-tone above; but the tonic itself is almost out of range. There is very little expectation of 4, not much more of its octave 11; 3 is rare, yet not beyond range; 2, 6, 9, 10 and 5 stand in about that order but not very high. In case of a higher pitched tonic there is little change in the relative standing; some below the tonic rise above the threshold of expectation, while some above recede. An accidental has about the same relation as after 6 as initial tone.

If now the melody begins with one of these same semi-tones lying between tones of the scale, that initial tone is very apt to be a non-essential. The direction which the melody takes with the next following tone, whether to the tone below or to the one above, depends on which of these is to be the first essential tone. 2 $\flat$  descends to tonic, whereas 1 $\sharp$  ascends to 2; the movement from 3 $\flat$  and 2 $\sharp$  is to 2 and 3 respectively. 5 $\flat$  is hardly a possibility (except in modernist composers), but 4 $\sharp$  leads to 5 and is not uncommon. 6 $\flat$  and 5 $\sharp$  lead to 5 and 6 respectively, 7 $\flat$  and 6 $\sharp$  to 6 and 7 respectively, (last hardly possible). In the case of 6 and 7 both initial and next following are liable to be non-essential.

To turn now briefly to the minor scale: it is 6 that usurps most of the functions of the tonic and may be regarded from the standpoint of psychology as equivalent in its effect to the tonic. The essential difference of this scale from the major is the lower pitch of 3 (by a semi-tone), and it is on this point that expectation is focussed. As established in modern music, the pitch of 6 (from minor tonic) is the same as in the major or a semi-tone lower, according as the movement is up or down respectively. 7 has usually the same relation to the tonic (as leading tone) as in the major scale. Aside from these differences, which lead to their own series of expectations, there will be a general correspondence as to the nature of initial succession of tones in a melody. But one interesting fact bearing on our discussion deserves to be noted. A composer often purposely postpones defining his tonality (whether major or minor) until expectation is raised to a considerable intensity. He begins the melody on 5 empty of harmony, and follows it with tones that would fit in with either major or minor.\* It might be objected at this point that to one who is familiar with the composition there is no longer any expectation or surprise. Granted; but the fact remains even after familiarity has dulled the edge of expectation, a large element in our enjoyment of the composition is

\*Beethoven at beginning of Fifth Symphony<sup>13</sup> and Sonata No. 26.<sup>22</sup>



the result of the expectation and surprise, the relaxation following upon tension, that entered into it as an original factor. It is analogous to the well-known fact in an illusion of sense; it takes effect even when the subject knows it is an illusion. But this point will find fuller illustration in the chapter on harmony.

The whole situation is at once complicated and yet rendered more definite when we pass on to consider possible expectation following two essential tones at the beginning of a melody. It will be impossible to discuss all such expectation or even to enumerate them. It may suffice us to point out certain general principles of limitation within which expectation moves and analyze certain typical or characteristic cases.

1) The two tones must be in some time relation to each other, and to the scheme of the piece, i. e., they start a rhythmic pattern, and that may in many instances turn expectation one way or the other. This will appear repeatedly in examples cited. Much depends also on whether the initial tone is accented or not, and on the way the next following joins on.

2) When the second tone of the melody is adjacent to the initial tone, it starts a movement of the melody either up or down the scale, that rouses considerable expectation of a continuation in the same direction. This is especially the case if the second of the two is an unaccented short tone. With a different rhythmic arrangement the same succession up or down is wholly satisfactory, but a departure from it is less noticeable.

3) If the first two are tones of a triad, especially the tonic triad, expectation of the third tone of the triad is quite definite; the same rhythmic relation as was suggested under 2) helps to heighten expectation, but this is not confined to any one rhythmic pattern. Nor is the expectation developed so strong as to occasion any marked surprise at a deviation.

4) When the second tone is an accidental it is usually (as above suggested) a non-essential transition tone. Its function then is to heighten expectation of the next essential tone of the melody. A fine example of this is Wolfram's song in praise of pure love in *Tannhäuser*.<sup>23</sup> The real movement of the melody is 1-3-5-8, the tonic triad, followed by the octave. But the composer, by the intervention of 2#, postpones the next tone of the triad and increases our pleasure at hearing it. But then, instead of proceeding at once to 5, he postpones that as well by rising to 6 from which we again expect to descend to 5; some composers would have made the mistake of trying to increase our enjoyment of the octave by a similar device, but Wagner lets it stand clear on its own merits, so to speak, and it gives the effect of virile honesty fitting the character.

5) When the melody starts on some tone not in the tonic triad, expectation is normally developed of an eventual return to some tone of that triad. The third tone of the series, or in fact all three of them may be selected for the express purpose of intensifying such expectation, and so securing greater pleasure of relief when, at last, the tonic triad is reached, or interest of surprise if it is evaded. A similar movement often is introduced in the course of a melody; a pause on some tone not in the tonic triad makes us look forward to a subsequent pause on a tone of that triad, which causes high degree of satisfaction.

6) The initial tone may be merely repeated, a case which was not included in the discussion above. In that case the melody has about as wide a latitude for the third tone as when following the initial tone. If the repeated tone is in the rhythmic relation mentioned in



2) above, it is transitional in character, and for our purposes may be disregarded; it hardly modifies expectation one way or the other.

7) There is the same limitation as above on extended leaps reaching an octave or over, the greater the leap, the less it is expected and the greater the surprise. When resorted to in compositions for the voice, they conduce sometimes to a humorous effect. But they are much more frequent in compositions for instruments—including, of course, combinations like the orchestra. The modernist composers are far more free in the use of such extended intervals than the earlier composers, though some are to be found in the classics. But as it took long periods of time for the average music-lover, who was habituated to the longer unfilled intervals of the pentatonic scale (or still earlier forms), to learn the superior pleasure of the short intervals of semi-tones that appear in the diatonic scale, so it will not be a short process to one feeling that pleasure to learn to enjoy the great leaps we find in the modernists.

8) Certain sequences are especially frequent in the cadence. The most common is 3-2-1 in many varieties of rhythmic arrangement. The composer Handel, uses this sequence repeatedly in all kinds of compositions. The 3 of this sequence is sometimes preceded by 4<sup>24</sup>, sometimes by 8<sup>25</sup> or 1, occasionally by 5; it is almost invariably characterized by tonic chord on the 3 with 5 of that chord as the bass. This position of the chord cannot serve as final and of itself rouses expectation of the dominant chord to follow; this again strengthens expectation of 2 in the melody, and when 4 is heard as the dominant seventh expectation is thoroughly confident of tonic (or 1) in the melody as the closing tone. The same cadence is found in Haydn, but he uses quite a variety, one which has since been used often; 5-6-7-8;<sup>26</sup> the same sequence that is so frequent in both Haydn and Mozart,<sup>27</sup> (also earlier works of Beethoven) as a sort of flourish just before a pause. As suggested before, the introduction of 7 as the leading tone made the rising cadence possible and quite satisfactory. In this particular case the dominant harmony is usually sustained after 6 is heard in the melody, rousing expectation of 7 to follow as belonging with that chord. With 7 is heard usually the full dominant seventh chord, and whatever position it takes, the tonic is fully expected to close the cadence. Both of these sequences with numerous variations have maintained themselves to the present day and still satisfy. One much more modern sequence reverses the order of the first of the two above specified, making a rising cadence 1-2-3. Gounod has used this several times, notably in the closing chorus of his "Redemption;"<sup>28</sup> expectation of 3 after 2 is heightened by emphasizing the dominant seventh chord (or some chord with a sharper dissonance) with 2 so that 3 with tonic harmony is welcome. Another cadence very frequent in Beethoven, 2-1, with a pause on 2, will be discussed later (v. III, 7 (b) below). The sequence 7-1 (or 7-8) preceded by 5 or 11 or 9 (or 4 or 2 or 1) is fairly frequent.

Another that has been popularized and stereotyped to the point of affectation is in intent a prolonging of suspense by postponing the inevitable tonic, but in effect it is a display of vocal powers on a high tone with suspense in reality eliminated because expectation is at the point of certainty. This cadence is 7-9-8,<sup>29</sup> with dominant seventh harmony on both 7 and 9, and a pause on 9. An alternate is 5-9-8.

b. To what has already been said as to the extent of intervals expected at the beginning of a melody, a few further points may be added as to intervals in the further flow of the melody. A succession of wide leaps without intermediate steps at any point would occasion marked surprise, but it is doubtful whether the shock would be pleasur-

able. In those melodies in common use in which the interval of an octave appears, it is almost invariably preceded or followed (or both) by shorter intervals. Bach makes use of intervals of nearly an octave quite frequently and in one instance at least gives a shock or surprise by the sequence 2-7-1;<sup>30</sup> in this case the melody rises from 2 to the leading tone, which raises full expectation of the octave, but he disappoints us by dropping to the tonic. In his D $\flat$  Fugue (Well-tempered Clav. Book 1)<sup>31</sup> for piano, the same sequence excites less surprise than it does for the voice. Beethoven in a song lets the melody leap from the tonic to 10, taking a new start, as it were; but he follows it up with diatonic intervals down to 7.<sup>32</sup> In the Gloria of the Missa Solemnis, he lets the voice leap from the octave of 5 to 5 and again from there to the tonic.<sup>33</sup> But he leads up to the highest tone with a series of chromatic intervals. But both these writers are wisely economical in the use of such leaps and sequences, as well as in the use of marked shocks of surprise generally.

Certain melodic sequences may be pointed out which indicate by their frequent use, even in some of the modernist composers, a sort of universal appeal.

1) 1-2-2-3 is a great favorite. The reversal, 3-2-2-1, or a similar movement at any part of the scale, are equally popular. It is to be found in such diverse types of music as the following: No. American Indian,<sup>34</sup> Beethoven,<sup>35</sup> Rheinberger,<sup>36</sup> Max Reger.<sup>37</sup> Its charm is due in large measure to the postponement and thus heightened expectation of 3, or whichever tone happens to be last in the series by repeating 2 or the corresponding tone.

2) Another almost as popular sequence is 5 (below tonic) -1-2-3, with or without transition tones that postpone 3 and thus heighten expectation of it. Beethoven uses this with profound effect in the Andante of both Second<sup>38</sup> and Fifth<sup>39</sup> Symphonies. Brahms has it in both Andante<sup>40</sup> and Finale<sup>41</sup> of the F. min. Sonata, in other piano compositions, and in songs,<sup>42</sup> with varieties of postponing notes and rhythm; also in reverse order. Max Reger uses it.<sup>43</sup> In fact, it is of such frequent use in both rising and falling sequence with great variety of transformation in composers of widely different type that the expectation involved is evidently of a highly pleasurable character. The interval 5-8 (or its equivalent) is itself grateful, and the two tones of the tonic triad rouse expectation of the remaining tone 3. But the interposition of 2 serves to heighten this expectation and 3 is then especially pleasurable. 2 $\sharp$  as a transitional tone is often inserted and serves to still further intensify expectation. As a figure extending in passages up and down the piano, Chopin is quite fond of it. It is almost equally common in minor and major.

3) A scale passage or a figure approximating the diatonic or minor succession of tones raises pretty definite expectation in the direction of movement. In some cases the surprise comes from a sudden interruption before it seemed due to stop, sometimes from continuing it beyond expectation. Chopin has several instances of the latter with tricky modifications of sequences. He uses also numerous figurations that depart more radically still from the scale sequences; each of these as it continues and is resumed from time to time excites the same sort of expectation which becomes more fixed with each repetition.

4) The sequence 7-6-5 with varieties of harmony and rhythm is evidently grateful. The tendency of melodic movement is from 7, the leading tone, to the octave; the movement downward to 6 gives the effect of an evasion and heightens expectation of 5 to follow. Certain harmonies can reduce this expectation to a practical certainty.<sup>44</sup> The reverse of this has a totally different effect.

5) In popular music hardly any melodic sequence has seen such wear and tear as 3-4-4 $\sharp$ -5.<sup>45</sup> The natural interval 3-5 is filled in with 4; the upward movement thus started rouses high expectation of 5, but that tone is postponed by the insertion of the semi-tone, which intensifies expectation of 5 and makes it grateful relief. This sequence may be reversed with a somewhat similar effect, but it is not in such common use.

6) A sequence made famous by Wagner as the slumber motive in the magic fire music,<sup>46</sup> namely 6-5-3, is exceedingly pleasing, and almost as frequent as the preceding. It is susceptible of any rhythmic treatment, but like 4) above, the reverse sequence is of entirely different effect. The dominating tone in this is 3, the descent to which from 5—even without intermediate tones,—is quite in keeping with expectation and brings out the psychological value of 3. We have already seen how readily melody passes from dependent 6 to strong 5, a descent that can be easily postponed with resulting increase of expectation and pleasure; that interval from 5 to 3 with its calming quality thus becomes particularly pleasing.

c. The psychological value—what a recent writer in the *Scientific Monthly* terms "tone-color"—of the several tones of the diatonic scale has been touched on incidentally in several connections already (a and b); a few details may be added at this point. Such values grow out of two relations in which each tone stands; first its relation to the tonic and to adjacent tones, and second its suitability to serve as the final tone of a cadence. 3 and 5 being tones of the tonic triad have a more direct connection with their base and enjoy a corresponding independence, either being possible as final tone of a cadence. The tonic itself is, of course, most satisfying in this latter position, 3 next because of the semi-tone 4-3, and 5 has the least effect of finality. When 5 is thrust into this final position it is almost always with the full step 6-5, or the half 6 $\flat$ -5, which heightens the expectation at that point. A cadence with the sequence 4-5 would be so unexpected as hardly to be assimilated; it is suggestive of the Phrygian mode in Greek music. A Hindu melody seemingly fashioned in that mode, contains such a cadence,<sup>47</sup> which is enjoyed by the musicians of that country. The quasi barrier between 4 and 5 referred to above (6,a) seems to be operative at the cadence as well as at the beginning. But no tone outside of this triad in the diatonic scale (and the corresponding triad in the minor scale) can serve as final in a cadence. Even modernists hesitate to infringe on this custom—if it be termed nothing more. (v. also III, 5, below). In a cadence 2 (or 9) may lead to either tonic or 3, the former being more solid and satisfying, the latter more soothing. 2 itself as final would be reminiscent of the Greek minor mode known as the Phrygian. Another approach to 3 as final is from 4, either in the so-called ecclesiastical cadence or as the 7th in the dominant seventh chord. A final sequence 4-3-1 is quite rare, but 4-2-3 or 4-2-1 are both quite common and according to definite expectation. But 4 itself as final in a cadence, while possible in the Greek major mode called the Hypolydian, is practically unknown in diatonic music. A cadence on 6 is at once interpreted as minor, where 6 becomes the equivalent of 1. It can serve as a transition tone for cadence either on 5 direct or on the octave through 7, which is wholly satisfying to us, though hardly known in pre-diatonic melodies; the half-step 7-8 is what makes it seem complete. For further discussion of cadence as affected by harmony, v. below, III, 4 and 5.

Now this psychological value, rising out of the relation of a given tone to the tonic and its suitability as final tone in a cadence, is

\*Dr. J. Proctor Hall, *Sc. Monthly* for Feb., 1920; pp 142-143.



determinative to a large extent of expectation in melodic sequence. But the evidence that can be adduced for it in any special instance would hardly convince the non-musical of a sceptical turn of mind, though the musician feels it as a primal fact, just as he does tonality in a composition. Experimentation, even if were applicable, could but report on the habituation of various subjects without furnishing convincing evidence of the ultimate fact. A consensus of opinion as a result of a questionnaire would do little more. The best evidence is in an analysis of the actual use made by composers of all types of the various tones to secure the aesthetic or even sensuous pleasure they all aim to create in the listener. In a large majority of cases it is quite out of the question to assume that the composers themselves were conscious of discerning any psychological value in the notes they wrote; if asked why, they would either turn from the question with a sort of contempt, or answer that those tones gave them pleasure, seemed indicated as suitable, or the like. An analogous inquiry is to ask a poet why he chose certain sequences of words or rhymes or rhythms; he would be the last to explain why, on any psychological grounds.

From the use of 5 in music it stands out as the tone of confidence, brilliant self-assertion, as of a bold venture forth, even though there must be a return somehow to the starting point of the tonic. To seek evidence for this by asking a number of people taken at random to intone the interval 1-5 vigorously and note the effect, might secure no result other than degree of habituation to the effect of intervals. But that composers feel it clearly appears from the following facts. When in an orchestra a full volume is sought the 5 is most frequently assigned to such brilliantly timbred instruments as the trumpet or cornet. This is even more the rule in popular music (witness the Sousa marches and other dance music *passim*!) than in standard writers, where it is frequent enough. In neither, of course, was it chosen with any clear thought of its psychological value, but this was felt or the tone would not have been used. Further is the constant use of 5 in popular and pretentious music as a tone to pause on in a turn of the melody, when some other tone would be more consistent in melodic sequence. There is corroboration also in the fact pointed out above that when 5 is the initial tone of a melody there is the widest range of expectation as to the next tone. Moreover (to anticipate), it is the connecting link in harmony between the two more important triads, tonic and dominant, being base of the latter. And finally, primitive man in the search for self-expression through the medium of tone, settled on this as the first definite interval, the tone preliminary to all the series in the scale. The fact that mathematically it represents the simplest ratio to the tonic, (3:2), and the highest degree of fusion with it (standing close to the octave in this respect), doubtless has some connection with the psychological effect; but about all we can do is to note the two parallel facts.

The psychological value of 3 is in marked contrast to 5. The difference can be felt most clearly by intoning the interval 1-5 or 5-3 vigorously, and then follow it up with 5-3 much softer. But here again, we observe the use made by composers of this tone of the scale. It is more common in cradle songs and other music intended to soothe and calm. Note the frequency of it at important points (beginning, modulations, temporary cadences) in the calming Andante of Beethoven's Fifth.<sup>48</sup> Bach<sup>49</sup> and many later composers have it in lullabys. Handel substitutes it for minor in his "Dead March."<sup>50</sup> But another important feature is that it gives character to the triad; omit either 5 or 1 and sound the other tone (1 or 5) with 3 and we



have no sense of emptiness or barrenness, but sound 1 and 5 together without 3 and the difference is very marked. This fact is of special importance in the expectation that centers upon it.

The triad that has 5 as its base includes 2, which bears the same relation to its base as 5 to 1; but its value in the diatonic scale results from its relation to the adjacent tones 1 and 3. While incapable of serving as final tone in a cadence, it points to either 1 or 3 and in certain sequences raises expectation to the pitch of certainty and corresponding satisfaction. Witness the long cadence to the first movement in Schumann's *Fantasie Op. 17*.<sup>51</sup> The melody is finding its way (and we with it) back to the tonic, as in many similar cases. The value thus indicated may be registered in consciousness by the following experiment: strike together 1, 5 and 10 (preferably in low pitch) several times and note the grateful relief when at last 2 is replaced by 1 or 3.<sup>52</sup> A similar relief is experienced if 2 is in the melody at the rhythmic accent in a cadence and the expected tonic is postponed. For fuller analysis of this v. III 7 b. below.

The second tone of the dominant triad, 7, which has the same office here as 3 has in the tonic triad, was not in use until long after the time of the pentatonic scale, but it will be convenient to deal with it at this point. It serves to fill in the long interval 6-8 in the pentatonic scale, just as prior to that 2 filled in 1-3. That interval 6-8 is not satisfactory in a cadence, but the intermediate tone 7 provides a semi-tone 7-8 and gives definite expectation and hence is more satisfactory, especially since it leads to the tonic or its octave. In fact, this leading is so definite that 7 when sustained (except in certain pauses) has a quality of suspense about it that may amount to irritation.\*

This is in marked contrast to the quality of 4, which is sobering, not to say solemn. It is the base of the remaining major triad, of which the tonic is the fifth, and this relation to the tonic is partly responsible for its value in the scale. It is the upper tone of one of the two half-steps in the diatonic scale, but that does not qualify it to serve as final tone in a cadence. It may lead, however, to a cadence nearly as satisfactory as that introduced by 7, as indicated above, with 3 as final tone; the sequence may be either from the dominant seventh chord to the tonic or from the sub-dominant, the former being a more perfect cadence. But it is the latter that exhibits the sober value of this tone, for it is almost universally employed in church music as the concluding amen, even though the piece (hymn or anthem) had a previous cadence from the leading tone. The added cadence from 4 seems to be more appropriate to the solemn mood of worship, to restore it. Another evidence of its quality is that the calming trio separating two brilliant sections of a march or minuet or other similar composition is almost invariably a modulation to 4 as the new tonic. A modulation to 5 would be a decided surprise and would fail to produce the sobering or quieting effect. All the popular marches have this intermediate section, always in the same modulation, selected because of the feeling if its appropriateness and not by arbitrary or conscious choice.

The quality of 6 is primarily that of dependence, which appeared even in the pentatonic scale, where it had a strong tendency to pass the melody on to 5. Moreover, it can not serve as a cadence, except in minor, though it can lead to a fairly satisfactory cadence either superimposed as 9th on the dominant seventh chord or as middle tone of the sub-dominant. The former emphasizes its dependent quality and rouses high expectation of the tonic chord and 5 in the cadence. Its chief significance as well as much of its value is due to the two following facts: First, it is the characteristic tone of the triad built

\*Dr. Hall, 1. c.

on 4; and second, it is the lower tone of the important minor third of the pentatonic scale, 6-8. In that scale the upward movement of the melody from 6 was always to 8 (in the absence of a leading tone), but not for a cadence. The frequent occurrence of the intervals 6-8 (or 8-6) in modern music is doubtless a survival of the pentatonic period. The use of 6 in later music as the base of the minor scale has served to emphasize its dependent character. Its early appearance in the scale is due to the fact that it was in common use and still is, even in undeveloped peoples, in the expression of grief, or pain or anxiety. The whine, the moan, the fretful tone, are all in minor in the succession of their tones. Other uses of minor will be touched on under the subject of harmony.

It must be admitted that these values of the different tones of the scale as just discussed, do not appear so clearly in some modernist music. There are two reasons that may be given for this loss of value. One is the attitude toward tonality, in consequence of which before there is any opportunity for the value of a tone to assert itself in its relation to the tonic, the latter has suffered change and expectation has no basis. Frequently after giving a definite signature, which supposedly is to beget expectation, the opening phrases are in quite a distant, even alien tonality, and confusion as to expectation and values cannot fail to ensue. In this respect, as in a case pointed out above, there must be opportunity for new habits to be established before expectation can be developed. The other reason is the persistent use in much modernist music of discordant blends of tone, the seeming reluctance to present a chord undiluted. This goes so far in many cases as to leave us even with a discordant cadence. It is impossible under this treatment for the normal value of a tone to assert itself in consciousness and time alone can tell whether this is an episode in the development of music or a real step forward which will eventually create its own new habits and expectation.

d. The use of accidentals at the beginning of a melody, has already been discussed (under a. above). Their function in melody in general is about the same as at the beginning, i. e., to heighten expectation of the next succeeding essential tone, and hence increase the pleasure of hearing or surprise in not hearing it (v. III, 6. b., below). The greater pleasure thus secured, like all intense pleasure, is apt to be dissipated by two frequent indulgence; it palls on the taste like too long or frequent eating of sweets. Franz Liszt and Dudley Buck may be noted as great sinners against the psychological principle of "too much." In some of Beethoven's greatest melodies there is little resort to the accidentals, pleasure being procured in other ways that bear repetition better, or even without repetition. Wagner has noble melodies, also Schumann, free from accidentals in the ordinary use, though they are frequent in enharmonic modulation where they maintain interest by well-planned surprises. The modernists use accidentals so freely in both ways (and all ways), sudden modulations, transition tones, turning the melody aside, enharmonic changes, that an unsophisticated listener has for some time a sense of confusion, and until there has elapsed the time necessary for new habituation, expectation becomes non-operative.

e. Just as was the case in rhythm (v. I, 8, above), a certain melodic succession, the intervals with special essential and non-essential tones, sets a melodic pattern which serves as a definite basis of expectation for the particular composition. Any deviation from that pattern, whether the latter was consciously noted or not, has a certain esthetic effect in a repetition, and the effect is increased almost in proportion as the deviation is clearly perceived. A notable instance of a pattern set at the beginning and abruptly broken (after several

repetitions) is to be found in Son. op. 31 No. 1 of Beethoven.<sup>53</sup> The composer chose the rondo form for this final movement, which involves recurrence of the general pattern at definite intervals. At the expected time he starts the melody *allegro* as in the pattern, but after the first figure he retards and then halts the melody entirely; the usual response (of the pattern) is then started, but in the same way retarded and halted. This is repeated nearly in toto, but then the melody is turned aside and led into an elaborate coda in which the initial figure of the pattern is a main feature. In another instance, he postpones the final tone of a rising cadence twice by a sudden halt on the leading tone—the second time an octave lower—and so maintains suspense of expectation for the final tonic, which he at last gives an octave lower yet. Son. Op 53, close of first movement.<sup>54</sup> In both of these the aesthetic effect on the listener is due in large measure to the reaction (different in the two instances cited) on his expectation.

f. The point just named in e. above has a special application in the device known in composition as imitation, when a melodic pattern announced in one voice (or part) or by one instrument, is repeated by another instrument, or in another voice (or part). The expectation of the various intervals and rhythm of the pattern in this repetition has a large share in the pleasure derived from this treatment of a subject. And for genuine enjoyment of polyphonic music in its thoroughgoing forms (canon, fugues and the like) there is an alertness of expectation demanded that amounts to an intellectual challenge. Here the appreciation of music on the intellectual side has a large opportunity. Memory of the original pattern—the subject—must be vivid, and attention must be alert to discern the return in a new voice, and note any deviation from the pattern. Yet imitation of phrases in a more emotional fashion is quite common in composers whose general method is far from polyphonic, such as Beethoven, Schumann, Brahms. But many listeners, perhaps the majority and including real lovers of music, fail utterly to catch the purpose of the composer and the meaning of the music because they have no hint of direction in focussing their attention and thus giving expectation a fair chance. The difficulty of following imitation, the intellectual effort required, is even greater in the case of so-called inversion, in which the direction of intervals (up or down) is reversed, while the rhythmic pattern is retained. Expectation follows the same lines but closer attention is called for.

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### III. EXPECTATION AS IT APPEARS IN HARMONY.

Harmony, which seems to us that are habituated to its meaning and charm an elemental factor in the art of music, is really of quite recent development. The question of its origin wears a totally different aspect from the same question with regard to melody. Whereas melody ran its independent course more or less concurrently with rhythm until all the resources of the diatonic scale and the Greek modal scales were at its disposal, harmony waited for this culmination before even its earliest manifestations. The inquiry whether it is really subconsciously implicit in melody need not occupy us here, although it is of great interest in itself. But at any rate the raw material, so to speak, of the most intricate harmony of the modernist was actually present in the commonly used intervals of the scale as they appear in melody. But for some reason, the novelty of letting two voices run up and down the melodic phrases together, but a fifth or a fourth or a third or sixth apart, seems to have occurred to none. And yet there was really a foundation laid for just that when men and boys or men and women sang the same melody. They thought of it as singing in the same pitch, unison, but as a matter of fact it was in octaves and it was already habituating them unconsciously to the simultaneous use of two voices. The long period during which this was done before its significance dawned on the musician is a witness to the perfection of fusion in the octave. But during all that long period it can hardly be doubted that two tones at other intervals would be accidentally sounded together and give an unwelcome sense of roughness to ears accustomed to the smooth octave. But it was not until long after the Christian era that any other interval came to be used in concurrent singing. To be practically available an interval must meet two conditions; it must be free from roughness, which would offend the ear, and it must be convenient for high and low pitched voices of the same sex, so that two men or two women could use it. The highest degree of fusion—smoothness—next to the octave is furnished by the fifth, and this interval met the other condition also. This was all the harmony used for a long period subsequent to its introduction. Barren as it sounds to us now, it marks a new era and a long step in advance on the century-long road to the modern achievements of harmony. The ear began now to be habituated to simultaneous sounds not octaves, and comparisons could not fail to be instituted between the two kinds of intervals. The point of significance for our purpose here is that to the purely melodic expectation already developed is now superadded a slight expectation of a fundamentally harmonic character. Attention was henceforth divided between the tone of the melody and the accompanying tones a fifth below, an important element in itself in the development of music appreciation. The absence of the lower tone, or any deviation from it, introducing another interval, would be noted at once and come as an unpleasant shock of surprise. One great aid in the habituation to two tones was the twanging of two strings tuned a fifth apart, and another use of the same device led to wholly unexpected but momentous results. The singing of melodies in one part had not ceased, but the constant accompaniment of the two strings gave something of the effect of the harmony a fifth below. But as the melody moved up and down the special Greek mode that happened to be employed, tones would be sounded that were discordant, rough even to our ears. The ear would simply accept



these as temporary and expectation would be fixed on the smoother combinations to follow. But there were differences in roughness and some attentive ear caught the combination 1-3-5, i. e., a tonic triad, possible in several of the Greek modes. The same point was reached by another route as well, by experiments with other intervals in singing, and with additional voices accompanying the melody. Both advanced very slowly, but were aided finally by experiments in greater independence of the lower part or parts. These, instead of following along at a fixed interval from the tone of the melody, were allowed some freedom of movement, either changing pitch while the melody remained fixed or vice versa, or ascending when the melody descended (or kept the same pitch), or vice versa. Each successive advance made in these various ways had to undergo its period of habituation with resulting development of expectation. With increasing variety there was still further strain on attention with expectation heightened more readily and interest more easily maintained. Each lower part came more and more to have characteristics of melody with the typical interest and expectation of melody. In this slowly developing polyphonic treatment of the voices the harmony was not a consciously sought end, but rather a sort of by-product. The interest seemed to be centered on the conduct of the several voices and while resulting harmonies added to pleasure and gave abundant opportunity for surprise, this latter effect was incidental. But there are limits to the polyphonic method pure and simple, arising out of the span and range of attention, and after its culmination in the works of Palestrina (1524-94), it was replaced by a method that had a rather unpromising origin early in the seventeenth century, but made the innovation of accompanying the melody with chords played by instruments.

2. Here for the first time appeared the full value and importance musically of the third tone, or 3, in the triad, giving content and character to the accompaniment which the empty fifth left so unmeaning. And the use of the major triad was followed by that of the minor, and aside from the increased expressiveness that could be lent to a melody by supporting it with full chords there was vastly increased range for expectation. At the same time, the range of attention being more restricted interest was better focussed. But both of these triads passed through a long period of probation before they were sufficiently accepted to be used freely and thereby beget expectation. The minor triad especially was regarded as rough, and long after it was in current use it was not expected in the final chord of a cadence, its sound was as yet too unpleasant. Although the prevailing harmony of a composition was minor and the closing strains to us would inevitably end in the minor chord, it was customary even down to the time of Bach to replace the minor third with the major in the final chord. This being merely a concession to the prejudice of unhabituated ears, did not have the aesthetic effect of a surprise as it now would. The majority of the minor preludes and fugues of Bach's "Wohltemperierte Clavichord" have this kind of a cadence; but a goodly number of them surprised the musicians of the day by retaining the minor third, and they are among the finest. Others had anticipated him in the use of final minor chords, but it was in accompanying a sung melody.

The great variety that becomes possible through the current use of the triad appears from the fact that each tone of the scale is a member of three major and three minor triads. Any tone in the melody is, therefore, open to be supported in those six different ways, at least. And as each triad has certain distinctive qualities growing out of the relation of its base to the tonic, it modifies the particular tone it supports with something of its own value.

3. The fact just stated not only shows how harmony as it gradually developed furnished a powerful instrument for the re-inforcement of melody, thus giving more adequate expression to emotion; it also suggests the great significance there is for our present inquiry in the great opportunity opened up for the heightening of expectation, and resulting satisfaction and pleasure in its fulfillment or corresponding surprise and interest in non-fulfillment. This is evident even in the early stages of the harmonizing era during which there came into being what we may call the obvious or simple harmonic treatment. Not that all composers observed this; Bach was anything but obvious at times. But a large part of his contemporaries and immediate followers (in time) were far less intricate and subtle than he. In fact, he anticipated an age far in advance of his own. The early obvious harmony may still be found reproduced in some of the most popular common songs, where subtlety would be decidedly misplaced and would fail of exercising any charm. Looking over any collection of favorite songs of almost any country, where the author of the melody is also the harmonizer, one can find abundant models of the obvious harmonic scheme which has very definite characteristics and expectations.

The tonic triad is confidently looked for to open the harmonic series, and whatever triad may follow next there is equally confident expectation of return to the tonic. The scheme most frequently to be found is that in the melody attributed to Rousseau and in common use in hymnbooks under the name "Greenville."<sup>56</sup> It is, subject, of course, to changes due to different melodic sequence: tonic—dominant—tonic (in this particular instance repeated)—tonic—subdominant—tonic (also repeated)—tonic—dominant—tonic. The particular form in this air is not as general as the sequence. The essential feature of the scheme is that the first departure from the tonic is to the dominant and after the return to tonic there is a departure to the subdominant before the cadence. This appearance of the subdominant before the cadence is of special importance as the same sequence in essence has maintained itself in some of the largest and more intricate forms like the sonata. In the simpler forms it is so regularly used this way that it has the effect of a signal that the cadence is not far away. There may be no return to the tonic before the actual cadence, but expectation is definitely excited of either the tonic followed by dominant leading in the cadence to tonic again, or of dominant with cadence, in the tonic.

Another simple harmonic pattern followed in many particular songs is that which passes into subdominant at the first, leaving the dominant for a later sequence. Tonic—subdominant—tonic—dominant; the same repeated except that there is apt to be a cadence, following which comes an episode. Here again, the essential thing is the early appearance of the sub-dominant, which seems to give a sober, less lively spirit to the entire song. "Annie Laurie" and "Suwanee River" may serve as types.

Both of these simple schemes have undergone numberless modifications—not including as yet modulation. Among these are introduction of some minor triads where tones of the melody admit, the change of the triad while the melody sustains or repeats the same tone, or conversely the sustaining of a triad while the melody moves, postponing the expected change in harmony or substituting some other chord for the one expected. But indulgence in much of this is apt to give the general effect of subtlety rather than of the obvious. A good example of considerable variety on the basis of rather obvious harmony is the popular "Largo" of Handel. Minor triads are rather frequent, there is even a threatened modulation, frequent inversion

of triads and the like, all without crossing the border-line and becoming subtle. And withal he manages a fine and very effective postponement of cadence, a case of heightened expectation and surprise. The melody has the leading tone, 7, in the octave, at a point seemingly fitting for a cadence on the tonic above. The composer makes expectation of cadence doubly strong by using the chord of the dominant seventh, which calls for cadence on tonic chord. But while the next tone of the melody is the tonic (octave), it is the subdominant triad, with its third the lowest tone, that supports it, and the expected cadence is evaded.<sup>56</sup> Handel satisfies expectation in a few measures after his surprise with a conventional cadence.<sup>54</sup> Raff, at the beginning of the march movement from the "Lenore" Symphony, has an effective turn from the obvious harmony he seems to inaugurate. The obvious triad for the fourth beat of his melody, with the tone 2, would be dominant, followed normally by tonic triad; but he slips in a minor chord with 2 as its base, while the nominal bass remains the tonic.<sup>57</sup> Being unexpected adds to the natural plaintiveness of the minor.

One of the finest examples of entirely obvious harmony, following from tonic to dominant and back again with firm precision, is in the first six measures of the Finale of Beethoven's Fifth Symphony.<sup>58</sup> The stately melody rises from tonic through 3 to 5, the harmony being the tonic triad; in descending back to tonic again the melody has the sequence: 4-3-2-1-2-1, the accent thus falling on 3 and 1. The harmony for the off-beats is the dominant, for the accents the tonic. This is quite in keeping with expectation and the effect is that of great positiveness of affirmation, decision without a quaver. Any attempt at a subtle handling of the harmony in this passage at once changes its character. I have been interested to compare with it the climax which Tschaiikowski works up in the third movement of his Symphony No. VI. (Patetica). The melody has a like grandeur of assertion, but the effect of decision is somewhat weakened by the harmony changing more frequently and subtly; the bass moves into subdominant while the melody remains on the tonic, and descends by semitones from 6 to 5.<sup>59</sup> It is a tremendously effective passage, but it has not the decisiveness that is so marked in the other.

A comparison of the three successive composers Haydn, Mozart and Beethoven, shows a steady progress in complexity and subtlety of harmony. Haydn seems to us of the twentieth century decidedly naive. His Symphony known as the "Surprise" has very little in the way of harmony that seems unexpected to us, while the burst of doubled thirds on the "Light!" near the beginning of his oratorio, "Creation," is pretty obvious if effective. It is even a question whether acquaintance with Bach would have deepened his incorrigible tranquility, whether the latter was not really too far in advance of his age. But one service of great value Haydn rendered, from which both his successors profited. He did for the sonata form, particularly in his chamber music and symphonies, what Bach had done so thoroughly for the fugue and other polyphonic forms, in elaborating his subjects by thematic development. We have already seen above (II, 6, f) how imitation and inversion both react on expectation; what we have to note here is the fact that increasingly composers have made use of imitation and inversion to add special interest to the harmony in the newly developed sonata form. In the canon and fugue forms all the harmony there is is furnished by the theme and its development in the different voices, whereas in the other forms there is a complete harmony supporting the one voice of the melody (therefore called homophonic). Now, when the theme itself or some modification of it is made an integral part of the harmony it has the effect of drawing special attention to itself with new interest. The effort



to follow it more closely does not strain the attention as in the polyphonic method, but the harmony which heretofore gave rise to expectation only in connection with the melody or upper part, now takes on a sort of independent life and has transferred to it and infused into it whatever expectation the theme had given rise to as the upper supported voice.

On account of its importance in this connection it will be desirable to point out the principal operations involved in what has been called development. The simplest is straight repetition which, as pointed out in the discussion on repetition, is quite allowable and often demanded. More interest is aroused if the intervals represented in the theme are left unchanged (or nearly so) and the entire sequence is transposed to another part of the scale; this seems to add to the freshness of the theme, to hear it on a different pitch. If this is restated in another voice, we have a special case of imitation. But the theme may be modified either by doubling the length of the notes composing it or by halving it, so that it requires more of an effort of attention to recognize it. These operations of augmenting and diminishing are not the only possible rhythmical changes; the accents of the theme may be shifted, giving a more or less altered rhythmic pattern, or the succession of tones may be made to yield a pattern of wholly different effect. But the most powerful effect of all, the most difficult as well, and attained successfully only by comparatively few even of the greatest masters, is the progressive extension of a theme by utilizing different portions of it, building it up from point to point to a majestic climax. I refer to such passages as that in Beethoven's Sonata Op. 106 first movement soon after the development has been taken up; the composer leads up to the key of G $\flat$  for his climax. Schumann has two such in the F sharp min. Sonata Op. 11, one in the first movement leading to a fortissimo in F. sharp major, the other the closing two pages of the finale. The significance of all this for us lies in the fact that in each and every type of development expectation is unfailingly active, following each new announcement of the theme from point to point on the basis of its first announcement. Pleasure of satisfaction accompanies each return of a familiar sequence, and each fresh turn as it is noted adds the new thrill of interest. While few moments in music are so full of emotional content, of unalloyed rapture, as a climax such as I have described. It is as if some great aspirations were being brought to their consummation.

Now all these various forms of development—with the possible exception of the last—may be made a part of the harmony supporting a melody; a theme or sequence that had already appeared in the melody being repeated as a sort of response in a lower part. Very skillful and beautiful instances are to be found in the Andante in B $\flat$  from Tchaikowski's First Quartette,<sup>60</sup> the imitative responses having often considerable freedom.

To come back to Haydn; his work in thematic development is not his only anticipation of or contribution to his successors; he has some harmonic feats that must have made his contemporaries jump with surprise. Some will be discussed later (6 a. and b. below). But these are so rare as not to change the general verdict given above.

Mozart learned all that Haydn could teach him and out of his own fertile imagination (in ignorance of Bach) evolved far greater variety and subtlety of harmonic treatment, so much so that for multitudes of music lovers of today, even in Germany, he represents almost the limit of intelligibility. His imitations in the harmony in double thirds not only strain the attention but involve sharp dissonances<sup>61</sup> which he does nothing to relieve. Such passages are endured for two special reasons that concern us. In the first place the movement of



the voices in imitation begets expectation and so interest in following the double voice; and secondly, the dissonance heard during the movement of the several parts raises expectation of a harmony to relieve it, and such relief is a real source of pleasure (v. 6, below).—The degree of subtlety he attained is seen at its highest in the opening strains of the C major quartet,<sup>62</sup> where he starts out with repeated notes on the tonic, whereupon the listener expects some tone of the tonic triad to follow; instead he hears 6♭ come in at the close of the measure. Then we hear 3♭ and the appearance is rather of something in the tonality of 6♭; but this expectation is defeated at once by 6 natural in the violin, the sharp dissonance with 6 flat below being avoided by the shift of that voice to 5, from which there is suggested a modulation to 5. But before we feel at home in that tonality the 3(B) is flatted and the entire sequence is repeated a whole tone below the former statement; and this time expectation follows it closely from point to point to see how exactly it is repeated and how it is followed up. Even Haydn's "Chaos" is not so subtle as that passage.

But a simpler test of subtlety in the way of meeting expectation is to be found in the tonality used by different composers in their works. But in statistics on this point it is evident that Bach's Well-tempered Clavichord should not be included, because it is a deliberate attempt on his part to cover all the tonalities, and quite a number are not to be found in his other works, a number more very rarely. In his works so far as examined, sixteen of the thirty possible tonalities were observed, only four of which had more than three flats or sharps in the signature, and only four had as much as three. C and G were most numerous, minors and majors about equal. In the works of Haydn examined only twelve tonalities were found. Of these G and D were most numerous, C and E flat next. Only one tonality was represented with more than three sharps, also one with more than three flats. But majors were in overwhelming majority over minors. The difference between Mozart and Haydn is less marked than between Bach and Haydn. In Mozart there is much more even distribution in the use of tonalities, less of difference between majors and minors; on the whole more balance but not much expansion. Beethoven represents a marked expansion with no loss of balance. In his works that were examined there were nineteen tonalities represented with a considerable increase in those of more than three sharps or flats. So far as noted he is the first to use A flat, D flat, E flat minor, C sharp minor, A flat minor and F sharp minor\* freely. Since his day there has been growing freedom in the use of tonalities, with such writers as Schubert, Schumann, Mendelssohn and Liszt pointing the way. The last named in the compositions examined has nothing in the following keys: C, G, F, D, E flat, and favors the tonalities with complicated signature. By that time, and in later composers to a large extent, the value of tonality as a test of subtlety is much diminished, as the fashion begins to gain ground to multiply sharps and flats in the signature as having a certain romantic flavor. It is a would-be subtlety that leads a would-be composer to choose D flat, when as a matter of fact he has not a D flat theme! Hence a truer test of subtlety is to be found now in the handling of harmonic sequence, the way in which expectation is met or thwarted and pleasure of satisfaction or surprise secured. And here we must again exercise a limiting selection because of the wealth of material.

Composers have made great progress since the day of Haydn in appreciation and use of the chromatic scale, in both melody and harmony. Some of its functions in melody have been pointed out;

\*Mozart has one case of F sharp minor—so far as noted, and also of A flat. . .

and much of the same inheres in its value in harmony. The movement of a harmonic part by semitones rouses added expectation for the following tone of that part just as truly as it does for unaccompanied melody. It has a stronger divisive effect on attention and calls for greater alertness of expectation, but for that very reason secures a higher degree of satisfaction when skillfully handled. Two examples from Beethoven may be noted, though all composers of rank use the expedient. In Sonata No. 12,<sup>63</sup> in the fifth and sixth measures from the beginning, the bass has the sequence 6-5-4 $\sharp$ -4-3, the 4 $\sharp$  even suggesting for the moment, a different tonality. And it is this 4 $\sharp$  that by postponing 4 and 3 heightens expectation of both. It would be correct and not unsatisfactory harmony to omit that half-step altogether, give 4 double time and then proceed to 3, which would be expected. But performance of this sequence followed by the one Beethoven wrote shows the vast superiority of the latter. Again in Symphony No. 2, in the *Larghetto*,<sup>64</sup> the fourth measure from the beginning gives the same sequence in the bass while the upper parts are stationary; and in the sixth measure<sup>64</sup> the sequence 7-1-2 is changed to 7-1 $\sharp$ -2, with the effect of heightening expectation of 2. A similar effect is secured later in measure nineteen by giving half-steps in two parts.<sup>64</sup> But the danger pointed out above in speaking of melody is present almost in the same degree in the lower parts. Spohr is a composer who seems to delight in the chromatic scale for its own sake, and his music suffers in consequence. Some of the modernist writers show a kindred weakness and suggest vacillation and uncertainty. And the popular caterers to passing taste exhibit their mastery of chromatic intervals in the bass (or other parts) ad nauseam.

Another point of prime importance in this connection is the contrasting use, for aesthetic purposes, of major and minor. Bach is pioneer here—as in so many ways—and there are few finer passages in organ music than that in the great *Fantasia in G minor* where the bass moves down by whole steps and half steps, interposing a minor chord when a major was expected, but soon restoring the expected major, and continuing this alternation in a sort of majestic procession,<sup>65</sup> and surprising us at the end by a harsh discord. But more effective in kindling and conveying emotion is the change from a prevailing major to a minor, or vice versa. Of the latter one of the finest and best known examples is that in Beethoven's Fifth Symphony, and a brief analysis of his procedure in that work will serve as an illustration of the treatment of the same change by him in other works and by other composers before and since. Others had used it, but it is through Beethoven largely that the possibilities of this aesthetic effect have become familiar and available. For his monumental work the composer chose the tonality of C minor (the same used in the *Sonata Pathétique*.) The first movement being in sonata form calls for a change of key in the second subject, and quite in keeping with expectation he presents that subject in the relative major E flat, which comes almost as a relief after the ominous, almost threatening exordium. It is further expected in the sonata form that the first section of the movement should have its cadence in the key in which the second subject was announced, and this condition is met.\* The ominous tone returns with the recapitulation and is brought up to a towering climax in the remote key of D flat, a quite unexpected move. At the point where in due course, the second subject is to return, he gives some premonition of his ultimate purpose by presenting it in C major. Now while these changes to a major tonality are so much in accordance to usage that to the habituated listener they seem

\*Evasion is not uncommon but occasions some degree of surprise; v. IV., 6 (c) below.

quite the expected thing, to one comparatively fresh in orchestral or other elaborate music both changes would come as a strikingly beautiful surprise. But that is not all that Beethoven is aiming at. Nor is his appropriate choice of tonality and harmony in the second movement—Andante in A flat major—his essential thought in this symphony; for he has the same change in the Sonata No. 8 (Pathétique) and No. 5 for piano. And the tonality of the third movement—Allegro—is quite conventional, C minor (same as first movement); only there is something disturbing and exciting about the rhythm and the melodic material, that suggest unknown possibilities. It is this exciting element that is carried to the highest pitch of expectation by the composer, as he approaches the final movement. While the full dominant seventh chord is being persistently and vigorously asserted in the upper parts the tonic is with equal vigor asserted in the bass by drum beats, making a sharp dissonance, until the ear and mind both fairly ache with suspense. Then comes the great surprise for which the whole work has been preparing us. The usual tonality for the finale is the same as that of the first movement, and in Sonatas No. 1, 5, 8, 14, 17 and 23 for the piano, all of which begin in a minor tonality, the finale does not change it. But here, after raising expectation to such a pitch, he bursts out into a sort of triumph song in C major, a tonality quite unexpected, because the prevailing tone of the preceding movement is minor until within a few measures; and the hints of major there are quite compatible with a return to minor in the Finale; hence it is quite a complete surprise. And entire familiarity with the structure of the whole work and with the frequent use of the same device by Beethoven (in Symphony No. IX, Sonata No. 32, and elsewhere) and other composers, does not interfere with our enjoyment of its uplifting power at each new performance. "Age cannot wither nor custom stale" its deathless charm.

The same change which is here connected with the transition into a new movement (also in the IXth Symphony) has often been introduced by composers within the limits of a single movement or composition. So in the great Largo of Sonata No. 29 (op. 106), after maintaining a deep and tragic minor (except in episodes) nearly to the end, Beethoven prepares and completes the cadence in major. Nearly the same plan is followed by Brahms in the Finale of his Third Sonata, in F minor. Schumann has two of the three earlier movements of his F sharp minor Sonata (op. 11) in that key, with episodes in major; the Finale starts out according to expectation in the same key, and it is only on the last pages that he verges toward the major and closes in a great climax. All these cases are far more subtle and elaborate and consequently with deeper aesthetic effect from the surprise involved than the naive and ingenuous manner of Schubert in such songs as the "Serenade," "The Nun," "Death and the Maiden," and others. To habituated ears particularly they come to have an effect of sameness. And many tyros in composition use the device because they feel its fascination and expect it to please, not because they are impelled to it by some deep aesthetic impulse. But as indicated above in other connections, depending too much on the expectation and surprise causes it to lose its effect, to pall.

Comparatively few composers have taken the contrary direction, i. e., beginning in major have ended in minor. A temporary excursion into minor with return to major is quite common; for instance in the rondo,\* or in a set of variations;† but in such cases there is quite

\*V. IV, 6, (b) below.

†V. IV, 4 below.



definite expectation of the return to major, and a failure to return would occasion surprise.

Tschaikowsky, in his *Symphony No. VI. (Patetica)*, has a near approach to the contrary direction. The first movement having begun in minor closes with long sustained chords in major, as many compositions prevalingly minor do close. The second movement takes the relative major of the first movement and maintains it. The third movement is likewise major and has a bright atmosphere, and the composer works up his great climax in this mood. The sequence of tonality thus far, is B minor, D major, G major. But in the *Finale* he goes counter to expectation on two points: first, he reverts to the minor tonality of the first movement and the main subject is persistently minor to the end; second, the symphony really closes with the slow movement, *Adagio*. And in addition to that, since he closed the preceding *Allegro* in major, fortissimo, there is quite a strong expectation developed of eventual return to major, but here the composer has other thoughts, and the disappointment he furnishes is evidently intentional and has its aesthetic value.

4. To all the expectation which had ever gathered about the cadence, the finishing touch was given by the fixing of the principle of tonality and the accepted use of harmony. It was no longer possible to let the melody come to a final pause on any tone of the scale that happened to be fundamental of the particular mode used. The modes were definitely abandoned and the diatonic scale reigned supreme, with its implied minor. The melody was now expected to close on one of the tones of the tonic triad, either 1 or 3 or 5, with tonic harmony. There are several possible closing melodic sequences, the most satisfactory being the descending sequence 2-1, the ascending sequence 7-8 (or the lower octave), and 4-3. The heightening of expectation that resulted when harmony furnished its background to melody was due to the fact that the presence of the leading-tone, 7, in the penultimate chord made the succeeding tonic chord inevitable. Even the cadence 4-3, semitone though it be, has far greater expectation if it is supported by dominant harmony; then, however, in the chord of the dominant seventh, no matter what position it is in, the cadence seems assured beyond a doubt. And the completeness of expectation when this chord appears can be measured by the satisfactoriness of the tonic chord when it finally enters. The cadence 4-3 with subdominant triad supporting 4 is quite allowable on account of the semi-tone; but it is not final. It seems possible for the melody to move in more than one direction. In the other case there seems no escape from the final tone. It is even possible to make the sequence 6-5 seem satisfactory by supporting 6 with the dominant seventh chord; the tendency inherent in 6 to lead to 5 is here reinforced by the concentrated expectation of that chord, and 5 with tonic harmony is accepted, indeed seems inevitable. This expectation based on dominant seventh can be still further intensified by repetition or interruption and postponement. A fine instance of repetition is in the cadence of the first movement of Schumann's *Fantasie in C*, Op. 17<sup>51</sup>. After a suggested close 4-3 he seems to give a real cadence 9-8; but even a repetition of the latter fails to satisfy the composer, and a third time he anticipated the 9 with a 10 from which the melody descends after a pause to 9, which is sounded repeatedly while the full dominant seventh chord is held suspended, as it were, above it, and then finally comes to rest on the tonic. An example of postponement after interruption is found at the close of the first movement of *Sonata Op. 53* of Beethoven. The melodic sequence, as it has appeared several times during the movement, is 5-6-7-8, all supported with domi-



nant seventh-harmony to which 7 finally adds the finishing touch of the leading tone. But after bringing the melody to the 7, instead of satisfying expectation at once, the composer sustains the tone, and then gives the whole sequence an octave lower with the one alteration of 6b, pausing as before on 7 and as before failing to give the expected tonic. Again the entire sequence is transposed an octave lower, and this time after longer pause on both 6 and 7, the longed-for tonic follows.

5. It can be concluded from what has just been said, that about the greatest shock of surprise a composer can administer to his audience would be the evasion of a cadence. Some possible forms of evasion are quite beyond the range of what we can assimilate at all, to say nothing of experience pleasure over. A writer who, for instance, prepares a regular formal cadence with the melodic sequence 3-2 supported by dominant seventh chord and then suddenly gave the chord of 1# as final,<sup>65</sup> or worse still, if following on the same sequence he closed with the chord of 4#, or 7b<sup>66</sup>; would practically forfeit claim to consideration as a composer. It might be done once as a mere jest, but the habit would be fatal. As a curious experiment I have tried the first of the two evasions above suggested repeatedly on myself and found strangely enough that the abnormal freakishness of it seemed gradually to wear off to a certain degree, though not to the point of actually conferring pleasure. And no matter how far afield a composer has wandered through the tonalities and harmonic sequences that the system permits, the approaching close of his work acts on the melody and harmony as the north pole does on the magnetized needle and they verge inevitably by some route—it may be purposely circuitous—toward the close on the tonic triad. The evasion of what we may call a simulated cadence in the course of a work is a very different matter and may give a high degree of pleasure. Witness the beautiful passage in the first movement introduction to Beethoven's Sonata in E♭ No. 26. The melodic sequence 3-2-1 is given complete, really a repetition of the opening notes of the introduction. Then the only harmony supporting 2 was the open fifth and 1 was met by a minor chord. This second time 2 has the full dominant seventh chord and expectation fastens on the tonic chord to follow; instead of that we hear a wholly new chord in a remote tonality,<sup>67</sup> 6b, and this tonality is asserted for a few measures to make us familiar with it before we are led back. But it may be well to point out a couple of instances in which tonic harmony does not appear as expected. One such is the close of the theme of Schumann's Symphonic Variations; we are left with the dominant chord resting on its middle tone,<sup>68</sup> 7. If it were intended as the last thing to be heard explanation might be more difficult; but the moment one hears the first chord of the variation immediately following, one realizes that the dominant chord with the leading-tone so prominent is only preparatory to the returning tonic. The same composer closes a song with an unresolved discord in a remote key,<sup>69</sup> and this is a more radical departure and is only partially explained by the statement that it is one of a series of songs, that the series finds a satisfactory close in the last song, and that the next song of the series furnishes in its opening chord a satisfactory resolution. What has just been said does not apply to numbers in opera or oratorio where the change of movement or mood necessitates changes of tonality and where disappointment over cadence may be the very aesthetic effect aimed at by the composer. This is one of the radical innovations of Wagner on the conventional opera, which was little more musically than a series of set pieces each with its complete satisfying climax and cadence. The case is wholly different in a detached composition, not a member of a series: Disappointment with reference to a proper

cadence would here come perilously near the line which marks off that which is beyond the power of apperception. We have learned to assimilate sudden changes of tonality without preparation through modulation—though many who listen carry away very vague feelings as to the meaning and value of it all—but to wait with full expectation all through a composition of some length for the haven of safety and then find oneself at sea, is most disconcerting, to put it mildly. Some such goal may be no farther from us in the music of the future than the dissonant blends and sudden modulations of our day are distant from the naive simplicity of a Haydn, or even from popular music of today, and it may require no more of effort and habituation.

6. (a). Modulation is essentially the outgrowth of simple harmonic sequence and like that needed as prerequisite the principle of tonality and the tempered scale. It is the effort to hold for continuous impression some one of the chords that might follow in natural sequence from a given tonic. This view of the case is corroborated by the results of a statistical study of modulation in the same composers that furnished data concerning melody. We have seen above that the chord most readily anticipated in sequence from the tonic at the beginning of a composition is the dominant based on 5; now if the above view is correct we should infer that the modulation most expected at or near the beginning was that to 5 as a new tonality, temporary indeed, yet real. So in the statistical inquiry of which a report is to be presented, there was no thought of proving to what different tonalities composers might and do modulate; the only question raised was this: what is the first modulation most apt to be introduced after the opening of a piece or a new theme in a piece? In this investigation no fugues were included because it is in the very structure of the fugue, as will be pointed out below (v. IV, 6, (a) below), that the second statement of the subject is in the dominant; hence there is no choice about it, though it has some weight as confirming the result. Moreover, cases of modulation from minor to relative major or from major to minor are treated as a special class, because such transitions are so readily made and do not involve any alteration of the scale intervals as do the modulations to 5 or other tones.

Over seven hundred miscellaneous compositions were examined for this purpose, the composers ranging from Bach down to Liszt, Grieg, Tschaiakowsky and the modern French; including works from the strictly classical to the lighter and the silliest popular, the aim being to secure as many-sided testimony as possible. Including provisionally the changes involving minor (either to or from) the modulation to 5 is the first to occur in over seventy-three per cent. of the compositions; and if those cases of minor be omitted 5 is the new tonic in ninety-two per cent. Those cases of minor amounted to less than twenty-one per cent. of the total, while all other modulations combined amounted to only about six per cent. (N. B. as the first modulation to occur in a piece or theme.)

There are two interpretations of which these facts are susceptible, both of which are valid and point to the same conclusion. First, the composers in resorting to that modulation with such overwhelming frequency, as compared with any other, are in reality reflecting the mind of the music-loving public. And second, their frequent use of the modulation has had its share in habituating the present generation so that it is the one expected. There is also a certain significance of another kind in the modulations represented in the six per cent. (or eight per cent. excluding the minors). Out of forty-two, twenty or nearly fifty per cent were to 3 as the new tonality, and eight were to 4. That is, the remaining tone of the tonic triad, 3 (the tonic and 5 being respectively original tonality and most frequent modula-

tion), has nearly as many cases as all the other tones of the scale, and next in order of frequency stands the base of the subdominant chord. It should be explained with regard to the latter that no cases of transition to 4 in passing from first section to trio in marches, minuets and the like was considered as modulation in the present inquiry, for a reason analogous to that which ruled out the fugue; i. e., the almost invariable tendency in such cases, amounting to custom, is to use 4 as the new tonality, the exceptions being changes from minor to major or vice versa, or retention of the same tonality. Another significant fact is that it is the more recent composers who show more freedom (I refer, of course, to composers of rank; the caterers to public favor hardly seem to be awake to anything but the dominant) in the use of modulations and some seem to feel and even express a sense of tyranny exercised by the dominant. Wagner was a conspicuous innovator in that direction, but his treatment occasioned greater surprise and protest at disregard of well-established rule and precedent, than of pleasure. But he by no means throws modulation to dominant into the discard; it still remains the first place in many of his works, though more frequent in the earlier.

In the works of Liszt that were examined, the modulation to all other tones exceeded in frequency those to 5, but the latter occurred more frequently than any one other one. In Grieg, on the other hand, 5 is far in the lead. Now whatever may be said as to the desirability of freedom in modulation, of its place in the progress of music as an art, the inference seems to be justified from the facts above adduced that the definite expectation of the music-loving public in listening to a new piece of music is fully satisfied on hearing the modulation to 5 before that to any other of the eleven other possible modulations of the tempered scale. This expectation is often heightened in composers who very rarely use any other modulation early in their works by an apparent start in another direction, which proves after all to be a mere postponement and adds to the pleasure and satisfaction when finally it is heard.

It is implied in the above that not only any tone of the diatonic scale but any of the intermediate tones as well can become in turn the fundamental of a new tonality. The relation of the tones of the new scale to the new tonic is the same as in the former tonic or in the standard scale of C;\* they have the same tone-color or psychological value, plus whatever difference may result from change of pitch. This does not imply, however, that the new tonic itself has the same psychological value (except as base of the scale) as the former tonic or the standard C. The value of the new tonic depends on two circumstances; first, the psychological value of the tone, which has become tonic, in the standard scale of C; and second, the ease of transition in the modulation. Thus the value of G as tonic in the signature of one sharp depends both on the tone-color of G in the scale of C and on the ease with which one can modulate from C to G. The latter point also appears when one modulates from, say B flat, to D: the tone-color of D in the scale of B flat has its share in the value of D as tonic in such a modulation.

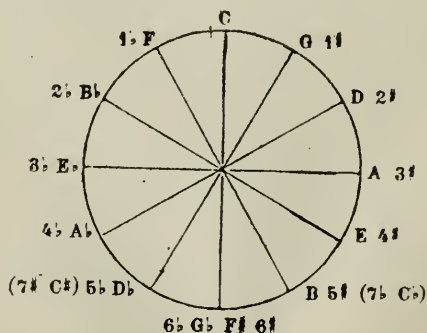
The ease of modulation as an element in fixing expectation needs further elucidation. The change to 5 as new tonic is accomplished by simply substituting 4# for 4, which then serves as a leading tone to 5. The change thus resulting from a rise in pitch and establishing the brilliant tone 5 as new tonic has an exhilarating, freshening, sometimes almost exciting effect, appropriate to the psychological value of

\*The convenience of the tone C for voices, a sort of meeting place of male and female compass, had its influence in selecting it as standard.



5 in the original tonality. The emergence of this modulation so frequently early in a composition seems to indicate a sort of instinctive demand for something stirring, for bright color: comparatively soon after the beginning. A corresponding change by lowering of pitch, i. e., by substituting 7 flat for 7 and making that the 4 of a new scale, brings the tonality to the fifth below the former tonic, to its 4. That 7 flat becomes the upper tone of a new dominant seventh chord from which we pass easily into the new tonic. But the effect of this is in strong contrast to the effect of the change to 5 and is in keeping with the psychological value of 4, which we saw to be sobering, calming. For this reason in spite of the ease of transition it is rarely resorted to early in a composition, and the effect of it can be clearly felt when used as, for instance, in Beethoven's Quartet in E flat major, in which that new dominant seventh chord formed by flattening 7 follows immediately on the tonic chord.<sup>70</sup> But the calming effect is sought toward the end of a piece and then this modulation is heard very frequently. It is this same sobering effect that is sought as a pleasing contrast after the bright and inspiring movement in minuets, marches and the like, after which the trio is therefore almost always on 4 as the new tonic. But the trios themselves need brightening within their own limits, as shown by the fact that in them in the great majority of cases tonality passes first to 5, before any other modulation.

This same process of sharpening 4 and flattening 7 can be successively repeated until finally the two processes moving in opposite directions meet on the same tone—this being a consequence of the tempered scale. The entire series of twelve tonalities can be represented by a circle traversed by six diameters dividing the perimeter into twelve equal arcs. Each end of a diameter stands for a different tonality. Let the diameter ending at the topmost point of the circle stand for the standard scale of C, then the points to the right may represent the tonalities formed by successive sharpening of 4, the points to the left those formed by successive flattening of 7. There are six of each and in a keyed instrument the sixth of each coincide, G $\flat$  (for six flats) and F $\sharp$  (for six sharps) being identical. The signature of seven sharps is found, but in keys of the piano it is identical with five flats; so, likewise seven flats is identical with five sharps; these are found in both major and minor. From such a plotting of the twelve (or fifteen) possible tonalities it is possible to tell by simple inspection how many



times 4 must be successively sharpened or 7 be flatted (as the case may be) in order to reach any given tonality from any given starting-point. If the signature already has sharps or flats then progress to the right



(from the top, following the hands of a clock) involves adding a sharp or deducting a flat for each successive step, while progress in the opposite direction involves adding a flat or deducting a sharp, and the sixth such change is always the meeting place of the two series. Now if the expectation of the modulation to 5, as it appears in the statistics given above, held strictly around the circle, the degree of expectation of any given modulation from any given starting-point could be exactly measured by the number of intermediate steps to the right, each of which represents one modulation to 5. On that basis, the expectation of a modulation to 2 would be twice as strong as of modulation to 3 as it involves only two changes to 5 while the latter involves four such changes. But here the statistics seem to almost contradict each other; for as was pointed out above, there were twenty cases of modulation to 3 in the seven hundred compositions examined, but not a single instance was noted (though there are cases) of the modulation to 2. The importance 3 enjoys as a member of the tonic triad, seems to offset the number of intermediate steps in affecting expectation.

But when a composer introduces a modulation involving several such steps, it does not follow that all the intermediate steps are explicitly taken; there are ways of leaping. The efficient means of modulating most often used is the dominant seventh chord which through the two half steps it suggests (7-8 and 4 to 3) rouses confident expectation of the new tonic to follow. But the circle shows at a glance what steps are implicit in any effected modulation, and the two signatures at the two ends of any diameter represent the tonalities that are farthest removed from each other, i. e., that require the greatest number of intermediate steps. Modern writers have worked out many short-cuts that facilitate quick changes to remote tonalities, and the rapid shifting some of them present is like a series of dissolving views, the relation of tonalities to each other and to the movement of a composition being reduced to a sort of fluid condition; one is conscious of movement, shifts of key relationship, but somehow expectation is held more or less in abeyance, and there is little or no surprise at changes that otherwise would almost shock. It must be said that some composers have resorted to sudden changes of tonality as a cover for poverty of invention or weakness of elaboration. Schubert notably shows in many longer works a lack of sustained constructive power and seeks to maintain interest by substituting for it (not consciously of course) frequent and sudden change of tonality. One change that is quite frequent with him is that to 6 flat; for instance, from C to A flat in the Finale of the Symphony in C,<sup>71</sup> and from D to B flat in the Sonata in D<sup>72</sup>. He does not stop for a dominant seventh chord, but just takes a leap. To those habituated to the more staid or solid modulations of a Mozart or a Beethoven, these surprises of Schubert may be delicious in their interest; but his frequent use of the device betrays its essential poverty and does not replace thematic development as a permanent source of interest and satisfaction. Another composer who frequently encounters the same pitfall was one of the foremost musicians of the nineteenth century, Franz Liszt. In his original works, those in which he is not merely presenting in embellished form the ideas of others, he no sooner announces a subject but he seems at a loss what else to do with it except to repeat it intact half a dozen times in as many different tonalities, the more remote the better. There is use of modulation with its surprise as an end in itself, and as a consequence many of his works seem unsubstantial and hardly compensate in interest the energy demanded to master the technical difficulties involved. In such cases the surprise is occasioned by passing over the head of the dominant seventh chord

in modulating or by leaping beyond the expected 5 to some remoter tonality without the intermediate step; in either case it degenerated very readily into a mannerism and the surprise loses its interest.

After the expected first modulation to 5 there is at once confident expectation of eventual return to the original tonic. Often this expectation is met at once by removing the sharp on 4 and restoring that tone to its place in the dominant seventh chord, and this is entirely satisfactory, other things being equal. But very often we are allowed to move for a time in the new tonality and are led farther afield, especially in the recapitulation section of a piece in sonata form. This is recognized subconsciously or consciously as a postponement of the inevitable, a keeping up of the suspense (not to say, prolonging the agony), until the final restoration of 4 (instead of 4#) gives the signal that the original tonality is to be in force again, which is a pleasant relief. After other modulations also the same expectation of return to original tonic is equally operative, but sometimes the return is accomplished without the signal of the dominant seventh chord. But in many and many a sonata form movement that signal is given with great emphasis when the main subject is to be resumed in its original tonality. The failure to return to the original tonic, the entire and final evasion of this conformity to expectation is about as rare as the evasion of a cadence and is found most often in works where continuity of parts and change of mood is demanded, as in operas, oratorios and the like. Such an evasion in a detached piece is about as disconcerting as the evasion of a cadence. The entrance of a subject the second time in a lower or higher tonality is a surprise that may have a desired aesthetic effect and may charm, but there is still expectation of the return of the original tonic, and in the vast majority of cases, it is satisfied—even by the modernists. The evasion is of that class of sequences that turn very readily into an unpleasant mannerism.

The modern freedom of modulation as compared with the sobriety and restraint—some are inclined to call it stiffness—of the eighteenth century is well illustrated in a short passage from the Pilgrim Chorus in "Tannhäuser", immediately following the modulation to 5, not far from the beginning, which the composer uses first quite in keeping with expectation. Instead of returning at once to the original tonic, he lets the melody leap an octave from B to B as if to start a little excursion in the new tonality. But he shifts suddenly in the next chord to minor, letting us hear the subdominant of B minor, the E minor chord; slides from that into the temporary minor tonic chord and follows it up by its dominant chord of F sharp with the leading tone A sharp in the melody. On hearing the latter, we fully expect return of the B minor chord, but are surprised by the melody dropping a semi-tone instead, while the bass rises a semi-tone; and we find ourselves in the relative major of B minor, D major, which is quite satisfactory in spite of the pleasing surprise. Beginning again with the leap of an octave seemingly in the key of D, Wagner makes the same shift to D minor as before to B minor, and repeats in that pitch the exact sequence entire, landing us in the key of F. Again a third time the same start is made and the same sequence follows up to the point where the melody dropping a semi-tone while the bass rises would give the key of A flat; but the expectation developed by a sort of incipient habit is not fulfilled, for the bass continues to descend by half steps resulting in the chord of B major, which slides into a dominant seventh chord with flattened 5 (F natural instead of F sharp). This rouses expectation of returning original tonic of E major; it is fulfilled, but not for long. That chord of E is treated as the dominant of A minor into which we are led, only to shift again to its relative

major of C. From this through a quick transition chord of A minor we find ourselves back in the B major chord with which the whole process started.<sup>72</sup> In the repetition of the process that now is begun expectation can follow from step to step, finding exact fulfillment up to the return into E major; here a new turn is given by retaining D sharp in the melody and entering by the simplest sequence into the same chord of B major which is now manifestly dominant to E; and so, the original tonic is restored in full sway.

As intimated above, Wagner was a great innovator in such treatment of modulation, though Schumann has passages that are almost if not quite as venturesome.\*

Since then the later composers have in some instances carried modulation to the point of hardly waiting to define the tonality of a work before they begin to depart from it by such devious wanderings that it becomes difficult to follow them. Max Reger, for instance, seems to be fairly restless in any tonality with which he starts out, and frequently with any into which he leads us; he is always on the move, and while he does not neglect thematic development (as some do) he seems to enjoy exhibiting his virtuosity in modulation. The merely sensuous effect is often pleasing in an unexpected sonority of sound that falls on the ear. But it gives the impression of having no starting-point, no *terminus a quo*, and in the course of its seemingly uncertain tentative steps, appears to have no *terminus ad quem*. This is not to be taken as impugning the sincerity of all such composers; it is simply looking at their work from the standpoint of the audience, the unsophisticated would-be musical public. The perplexity of mind with which they listen to music of this type is sufficient evidence of their lack of habituation; there was nothing to serve as a *pou sto* for expectation, and but for the power of public opinion known as fashion, the majority would frankly admit that they had been insufferably bored.

b. One of the short cuts resorted to in modulation, to which reference has been made, calls for special mention. It is that which is termed the enharmonic change. The basis of this is the fact that each tone of the tempered scale and the intermediate tones as well—the entire chromatic series—may belong to three major and three minor triads, besides serving in four dominant seventh chords and a diminished seventh chord. Any one of the six triads may become the tonic triad of a tonality and each of the dominant seventh chords and the diminished seventh chord may introduce to a new tonality. When any tone is approached from a certain harmonic or melodic sequence, the listener expects that tone to keep its place in the tonality that led to it and act in turn as transition to other tones and harmonies that are at home in the same tonality. But the plans of the composer conflict with this expectation; by a sudden turn and without any of the intermediate steps of a modulating series that would be an aid to expectation, he leaps at once from the tonality in which the tone was first heard to one that may be quite remote, and the interest and pleasure of this maneuver are due largely to the surprise. The listener finds himself transported to new realms rather suddenly, and readjustments of attention are frequently necessary. The degree of surprise is dependent largely on the remoteness of the tonality chosen.

This is manifestly a marked advance in subtlety and power of expression and is more frequent in the modern phases of music. Yet Haydn makes use of it more than once, perhaps the most striking example being in the Fifth Symphony. The subject is quite in Haydn's style, likewise the bulk of the harmony, although he postpones the

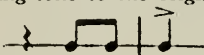
\*See the analysis of his Sonata in F sharp minor under IV, 6. (c) below.



usual modulation into 5 until after two short repeats. But having modulated he starts off as if he meant to continue in the new tonality, for which also he uses a second subject. With this he modulates easily into the relative minor of the original tonality, B minor, and from there by an easy series of progressions to F sharp minor, the chord by which he enters being the dominant, C sharp. Several repetitions of a part of his main subject in this chord serve to emphasize it and he fixes the base of the chord in our minds by reiterating it

with the following rhythm:  with leaps of

an octave. The same figure is continued in the basses alone, and then suggestions of it pianissimo, still on C sharp, leaving the definite expectation that after the brief silence he would resume in the same tonality. And then comes the true surprise for which he has but been preparing us. Having entered the chord of C sharp by one route, suddenly he indicates that its base is to resume its former function as leading-tone to the original tonic, D, by giving the end of the above

figure  fortissimo on D,<sup>74</sup> in all parts. Then with

no further ceremony he starts up his first subject again as if *da capo*.<sup>\*</sup> A somewhat similar sequence is given again but a few measures later. The rarity of such moments in Haydn enhances their aesthetic value; but by contrast the frequency of them in Max Reger tends to make them common-place. In some works he hardly allows the listener time to get adjusted to one tonality into which he has just leaped before it turns out to be a mere springboard for the new leap, with consequent confusion. Bach, Beethoven, Schumann and Brahms reveal in their works entire familiarity with the device, but do not use it for its own sake.

c. When there appears in connection with a chord (or two tones of a chord) another tone that is discordant, expectation is immediately aroused of a chord to follow with the discord eliminated. For instance, the combination C-F-G leads us to expect either C-E-G, or C-F-A, and other things being equal the one is as satisfactory as the other. About the mildest form of discord is the so-called dominant seventh chord, in which the base of the triad may be adjacent to the discordant 4 or separated by nearly an octave: Our ears are so thoroughly habituated to hearing this combination G-B-D-F—or its equivalent in different positions and tonalities—in cadences and other sequences, that it hardly gives us the impression of being discordant; especially when it is supported by a good bass. But sounding adjacent F and G together, with nothing to take off the edge of the discord, betrays its true nature; and doubtless more delicate ears were offended by it on its first introduction than were by the third in a triad when it first found its place. One means of reconciling music-lovers to it was the delightful change when the expected tonic chord followed after. And it is the element of mild discord in it that creates the expectation of change,<sup>†</sup> an expectation still operative to listeners who are sophisticated and who might deny that it was discordant at all. The change from such a discordant combination to one free from discord, is what

<sup>\*</sup>For a somewhat different interpretation of this passage, see "Beethoven and his Forerunners," by Daniel Gregory Mason, p. 207.

<sup>†</sup>The half-steps B-C and F-E indicate the direction of change; the discord as such calls for some change.



musicians have termed "resolution" and the time during which the discord is held is "suspension."

Now there was the material for suspension at a very early stage of music, when, for instance, a melody touched upon tones that made a dissonance with the fifth or triad sounded by instruments. There was strong expectation that such a melody would not tarry long on those discordant tones; but if a composer or artist had so tarried there would have been, along with the surprise of it, expectation heightened to impatience that he pass on to the next tone of the melody. And that is exactly the effect of suspension now.\* The degree of expectation is measured in part by the intensity of the dissonance.

In the Fifth Symphony just before the entrance of the Finale, the mild dissonance of the dominant seventh chord is much sharpened by sounding the tonic at the same time. When consecutive semi-tones are heard together, the irritation of the dissonance not only creates displeasure but lively expectation as well; and it must take a long disciplinary course of ear-training before successive leaps from one strident discord to another—like those affected by Leo Ornstein—can afford anything but acute displeasure to the sensitively endowed.

7. (a) The keenness of expectancy noted in suspension above is at its height when to the discord is added the weight of the stressed beat and a more or less prolonged hold in some part. An illustration of this is found in Beethoven's Sonata No. 14, in the first movement, the sixteenth measure. The harmony indicated in the previous measure is B major (dominant of E, which in turn is relative major of the tonality of the movement, C# minor), and the harmony of the figured accompaniment passes here to E minor; but the melody passes from B to C natural, while the bass sustains B for a beat, and the first tone of the figure is also B, these being both in sharp dissonance with C natural of the melody. Now while in the bass the successive tones of the E minor triad (E and G natural) relieve the tension at that point, the B in the figured accompaniment (B-E-G) is repeated at each beat so that the ear is reminded of the dissonance with the sustained C of the melody. On the fourth beat the melody shifts while the figure is continued, but a new dissonance takes the place of the old, A# against B; then follows in the next measure the resolution to the chord of B major.<sup>75</sup> I suspect that the A# takes the place of a repeated C natural; the dissonance was dying away with that sustained tone and the A# renews it, at the same time adding more interest than a mere repetition. The main point is that in this measure the expectation is intensified by the combined action of rhythm—the stressed beat—melody—the sustained tone—and harmony—the discord; the chord of B in the next measure is a relief after rather prolonged suspense. Such cases are entirely apart from a cadence, though in the first movement of the B flat Sonata (Op. 106), there is a long series of suspensions in which the sustaining appears in the figured bass, beginning twenty measures before the end and preparing for the cadence, which then follows in the straight B flat chord.<sup>76</sup>

b. The cadence with suspension as it is frequently used in classical music, seems to have been discovered by Haydn—I recall no instance in Bach or other earlier writers. In it is centered all the expectation just spoken of with some added features that are worth analyzing. As used frequently by Beethoven, it involves several elements of suspense and expectation not found in the ordinary suspension. In the first place, the preceding melodic sequence points definitely to a

\*The transition made by Beethoven into the Finale of the Fifth Symphony, described under 3, above, is really a case of suspension and resolution; the object of that analysis was to point out the effect of change from minor to major.

cadence, with some tone of the dominant seventh chord preceding the tonic; the most frequent is 2, but 5 occurs in the First Sonata,\* 7 in the Fifteenth,† and 4 in the Thirtieth.‡<sup>76</sup> To this is added the presence of the full chord (usually), which of itself leads to expectation of the tonic. Then thirdly, the tone of that chord is heard on the rhythmic accent, just when the tonic was expected, i. e., expectation of the tonic is heightened by postponement. But, finally, while the dominant seventh chord is sustained through one (the accented) beat, and sometimes more, the tonic is heard at the beginning of the beat, i. e., on the rhythmic accent, in sharp dissonance with that chord. With the habituated the sense of form, that according to melodic structure the cadence is due, adds enough to the intensity of the concentrated expectation to make the tonic a grateful relief when it does come. It is worth noting that Beethoven does not use this cadence in the great sonatas after No. 19, except in No. 28 and 30, whereas before No. 19 it occurs nearly thirty times. It is also quite rare in his symphonies. He may have realized instinctively that it was possible to overdo it and experimented with other cadences, of which he has a great variety.<sup>80</sup> The charm of this one as it appears in the Andante of the Kreutzer Sonata for violin and piano cannot be gainsaid. But it must also be said that Beethoven has his own manner of introducing this cadence so that it sounds far less formal than in either Haydn or Mozart.

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\*End of first section of first movement.<sup>77</sup>

†End of Andante.<sup>78</sup>

‡End of theme of Andante,<sup>79</sup> also end of last Variation.

#### IV. EXPECTATION AS IT APPEARS IN FORM.

1. While form as a creative aesthetic principle in the elaborate structure of a composition is of recent development, having followed even the development of harmony and being very largely dependent on it, it has a life of its own in dim pasts when melody was struggling to make its way.

As was suggested under the subject of repetition above (Intro. III, 2, c), there seems to be a basic impulse born with a melody or melodic sequence to repeat it. Many a bird has its particular little phrase of a few tones and sits by the hour repeating the same catch on the same pitch. Man even as primitive learned early the delight of varying a sequence, but having invented a new pattern of rhythm and intervals he also enjoyed hearing himself repeat the new pattern, and others enjoyed listening to him. Being accompanied frequently—if not invariably—by dancing, the time of phrases came to be determined by the rhythm of the dance, and since that is primarily movement by twos (v. I, 3 above) the repetition of phrases fell into the same swing. Thus the melody had impressed upon it a rhythmic pattern of the simplest kind; it might consist of a single phrase of two or three intervals repeated at regular intervals twice, or of two phrases that went together and were repeated by pairs. In this primitive stage the expectation roused by rudimentary form—for that is what it was all unconsciously—merged with that roused by the rhythm as such. However that may be, this arrangement by twos is basic in modern form, even though it has been elaborated and modified in a great variety of ways. In very many cases departures are more apparent than real and where they are real it is with conscious purpose for definite aesthetic ends. Even the five-beat measure in Tschaikowski's *Symphony Patetica*<sup>31</sup>—second movement—starts off by twos and fours, whatever liberties he may take with them later. And when we look at the simpler forms, popular or classical, of the age of Bach and Haydn or of the twentieth century, we find the phrases recurring in their various modified repetitions by twos and fours. It would be an interesting experiment to challenge some present-day song writer of undoubted popularity to put one of his most captivating creations into an irregular form, so that the expected accents would fail and turn up a measure or two late, the whole melody including a number of measures not divisible by four. It would undoubtedly prove a failure because of the persistent failure of expectation. Even ragtime with all its atrocities sticks religiously to the two-four scheme; though whether "jazz" pretends to or knows what it does or claims is much to be doubted.

The Greeks gave some little impulse to the development of form by the use of melodic intoning in reciting their poetry. The length of the phrase was accommodated to the length of the verse and so phrases of equal length prevailed. Something of the same custom prevailed in the services of the medieval church, where also the Greek modes continued to hold their place. But one of the freest turns in the development of form was in the phrases of melody with words with which laborers in all countries have accompanied their work. For convenience in concerted action as well as for the sense of exhilaration the operations were rhythmically arranged and the song was fitted in antiphonally, so that phrases of equal length were joined in twos. This simplest form appears quite clearly in some of the early

secular songs, contemporary with the use of fifths in harmony by the church, but themselves all innocent of any such seemingly foreign element. But it needed freer use of harmony, and principally the emergence of tonality, to give the needed impulse to the modern development of form. And it was the simple song as used in various national dances that became the pattern for the simple instrumental compositions and have even left their imprint in the name "Song Form."

2. In the few varieties of Song Form that have been developed one thing is common and fundamental, i. e., *repetition* of melodic material after intervals or even immediately. The repetition dots invariably found in the minuets, waltzes, gavottes, marches, polonaises, gigue, bourrees, and the rest, were neither accidental nor arbitrary; they were merely adopted by the composers from the songs they heard. As a certain figure of a dance was repeated, the melody that accompanied it the first time was also repeated. If the dance was elaborate enough to have an episode of a different figure, this latter lasted the same number of steps and had its different melodic phrases; but it was confidently expected that the first figure would then be repeated and with it the music as before. When a composer adapted some such popular air for performance on an instrument, the repetitions were included as a matter of course. And he followed the same pattern if he invented a melody that might accompany a minuet or bourree, and gave it the name as well as pattern of the dance.

Now in the case of simple repetition of the intervals and phrases of a melody, expectation would be more or less alert and anticipate them from point to point. In similar cases even at the present day people can be seen tapping with the foot or beating out time with finger or head, and even fuller breathing ensues at the same turn in the melody. The expectation is that no alteration in intervals or rhythm shall interfere with the satisfaction of exact repetition.

3. In case there is to be an episode with different melodic material, this will be followed with the general expectation noted for all melodies and interest for its new phrases. But after it has come to its cadence and has been repeated with much more alert expectation, then the return of the original melody is looked for confidently; and here as above (2) exactness in all details from initial tone to cadence is fully expected. Even if a minuet had a sort of pause, with or without special dance figures to fill it in, at the close of the music (called a Trio and usually in a quieting, sobering tonality, 4 of the original tonality), the entire figure of the dance with all its music would be repeated as before, and each separate section of it as well as the details of phrase and interval give rise to appropriate expectation as before. Many composers have enlarged on this pattern in a great variety of ways from the simple adding of a coda that seems to suggest appropriate meditation after the dance, to such elaborate variations as Raff gives in his "Rigaudon" from the Suite in B $\flat$  Op. 204. Beethoven's great Scherzos are founded on the same scheme.

4. The so-called Variation form, once exceedingly popular and not wholly obsolete yet (witness Elgar's "Enigma" variations, and d'Inty's "Istar" variations), grew out of a desire of composers to invest such repetitions as have been indicated with some fresh interest, to escape the monotony of sameness. Doubtless singers of the dance tunes were wont to amuse themselves and the listeners with occasional departures from the set pattern. It was material ready furnished for the composer when he used one of the common dance tunes for a set of variations. Moreover, a set pattern like this, not too elaborate and easily followed, was a distinct advantage in the working out of variations. The composer had the double duty of arresting attention and creating interest by the freshness of his improvements—or at



least changes—of the familiar melody and at the same time not tax their attention too severely by complexity of form. So it has remained the rule for good psychological reasons to start out with a simple pattern for theme, simple too in rhythm, melody and harmony, no matter how elaborately they enlarged upon it and even stretched it to almost unrecognizable dimensions. Moreover the variations begin with one that makes comparatively slight demands on the attention as if the composer wished to lead the hearer by gradual steps to the more intricate modifications of the theme, so that he would not then be bewildered as if wandering in a labyrinth but could still follow the general clue furnished by the original pattern, which underlies even the most complex variation. The hearer is further aided by the composer in that the several parts of a variation are repeated just as those of the theme were, and this permits of better grasping and following the intent of the variation the second time, its relation to the original.

But what we have in the variation is not what was spoken of above as thematic development, though some of the earlier samples are not much more. It is a deliberate effort to present several elements presented by the theme, chords, melodic and harmonic sequences and phrases, in such new and strange guises as to both satisfy and baffle expectation. A melodic phrase is put into a lower voice, which gives it a new aspect; or successive phrases are presented in different octaves. A chord is replaced by a figure in which the several constituent tones are given consecutively and the ear has to reconstruct the chord effect in imagination. Or whereas the melody in the theme followed the rhythmic accents closely, a variation will let the tones come lagging in half a beat late, to which expectation has to adapt itself. Or the few tones of a melody may be multiplied by two or three or four and the pattern filled out while the accented tones of the varied melody are strongly reminiscent of the original. This is what Beethoven does for the opening theme of the *Andante* of his Fifth Symphony.<sup>32</sup> Or a very simple chord motive or pattern is made the basis of wholly new thematic material more or less elaborate, and here expectation is centered on the chords of the pattern as they are presented under new conditions and often in new guise. The same composer does this for the slow movement of his Sonata Op. 57<sup>83</sup> (*Appassionata*). In his "Thirty-three Variations" on a Waltz by Diabelli, he practically invents new thematic material, often only remotely suggested by the simple self-satisfied theme, for each successive variation, merely keeping some faint semblance of the original structure as a background. This pattern keeps itself before us also in the almost unflinching repetitions of the variations, only a few being more free in deviating from the pattern. Some of these, especially the grand fugue with double subject (No. 32) and those that call for some special virtuosity in rendering, demand careful study to reveal the substantial conformity of structure with the theme.

When a set of variations is in a major tonality one of the set, at least, is apt to be in minor, usually with the same tone serving as minor tonic. If, however, the theme is announced in minor, then one variation at least is apt to be in major with the same tonic, and it may have a finale in major as well. Scharwenka (X.) has a theme and variations in D minor; two of the latter are in D major,<sup>34</sup> and the finale has the same key. In both of these cases expectation has the same problem to deal with, and the new meaning intervals acquire with the different harmonic support is a constant source of surprise and interest.

One special bearing of the whole matter of form in music on expectation may be mentioned here, as it appears very clearly in the

simpler variations. The expectation that centers on the cadence, as we have seen above (III, 4), is confirmed still further and made more definite by the expectation that grows out of the consciousness of the form. A cadence is fully expected, of course, for any and every species of musical composition, and its approach can be often forecasted some time in advance, especially by one trained in the technique of composing. But with the more complicated forms there is no certainty in advance as to the length of a work and the listener must wait for such indications as the unfolding structure of the work affords. But in the simpler variations, at least, and often in the more elaborate, the song-form with its definite length and its repetitions is the basis of all. The very place where the cadence must appear is assigned by expectation in advance, and any evasion of it or, worse still, omission of it entirely, would pass beyond the line of pleasant surprise or shock. The only possibility would be one like that already mentioned above (III, 4), that the chord expected as final in the cadence of one variation becomes the opening chord of the next, so that one merges without complete cadence into the other; even this is very rare. But in compositions that are professedly in the song-form, such as simple minuets, waltzes and the like, the place of the cadence is definitely assigned by expectation and an evasion or omission amounts to repudiation of the form. A composer who undertakes to lift a waltz, gavotte or other dance of the song form type, into an elaborate work of art, is not bound by the same narrow limits, but frequently his work is nothing more than a multiplication of units of the same type and permits of a good deal of the same forecast. The Strauss waltzes and some of Chopin's (C# Minor) are of this type.

5. The special manner of announcement of a melodic subject, the figuration that appears at the beginning of a composition, or even any striking harmonic sequence, set definite expectation in motion that does not cease until the close of the work. Many of Bach's Preludes in the Well-Tempered Clavichord (notably No. 1 in C<sup>85</sup>), Preludes and Etudes of Chopin, Schumann's great Fantasia in C<sup>86</sup> in the first and third movements, some of Brahms' shorter piano compositions, and the scale subject in the Scherzo of Schumann's piano Quintet,<sup>87</sup> may serve as samples of what is meant. The figure that ushers in the work, the peculiar pattern of the subject, creates a sort of atmosphere that pervades it and is definitely felt throughout. It may not be incessantly repeated, though it often is; but the hearer confidently looks for its return and greets it with satisfaction. Every deviation from the pattern can be readily noted, whether it be transposing to a different part of the scale or even into a different tonality, or inverting the intervals from ascending to descending or *vice versa*, or changing time relations enough to make the progress of the movement interesting without making the figure unrecognizable. This does not allow of any such freedom as was noted in the variation form; we are dealing not with a series of phrases woven into a complete melody and eventually constituting a finished composition, but with independent units that are identical (or nearly so) and by their succession make the character of the piece, something like the repeated figures in an ornamental design. Standing out against this as a background may appear a melody, either composed of successive accented tones of the figures or carried independently. Then the expectation roused by this melodic succession joins with that centered on the figuration; and here attention may be divided or may be voluntarily fixed on the melody alone, leaving the figured accompaniment to provide its under-current. The spinning songs of Mendelssohn, Raff and others furnish examples of such treatment, also some cradle songs. The monotony of exact repetition, completely satisfying expectation

to the end, may be just the effect aimed at by the composer, or it may suit his purpose better to surprise and interest in ways suggested above. In the latter case the psychological limit of variety he sets for himself is fair recognizability of the figure.

6. The song-form and its extension in variations presents to the composer a rather limited field of operations and the effects he prepares and works are necessarily on a limited scale. It is in the larger and more complicated forms that he has an opportunity to build up to climaxes of expectation, and by satisfying it duly or by well-managed surprises to add to the intensity of enjoyment. To see how some composers have achieved this end we may proceed to something of an analysis of the three forms that permit of elaboration on the largest scale, namely the *fugue*, the *rondo*, and the *sonata*.

(a) **The Fugue.** This is a special case of imitation with more elaborate treatment, and its peculiar character may be best discerned in distinction from the canon to which it is most closely related. The regular canon starts out with an announcement of a subject in one voice with no accompanying harmony. After a number of measures—or it may be in the very first measure—the same subject is announced again, the intervals and rhythmic value of the original being quite rigidly followed. The composer may, at his option, let the second announcement begin on the octave of the first, on the third or fifth, or for that matter any tone of the scale, with slight modifications of interval. But having once set out as second subject it is supposed to “follow the leader” point for point through any elaboration or modulation; and the two voices with the implications of their intervals furnish all the harmony. It is supposed to terminate just as many beats behind the original as it began, though for the sake of a more satisfying cadence in unison a few tones may be added to the original or cut off from the follower. During the course of such a composition attention shifts from one voice to the other and a sequence noted rouses expectation of tones to follow in the second part. In the original there is nothing but general melodic expectation, but the sequences etc. already given by it form a more definite basis of expectation for the second voice. Klengel has a long series of such canons in which he seems to be making a deliberate attempt to show what can be done in this form, different ones being on fifth or octave, etc. But there is not enough chance for variety of interest to compensate for the strain of attention that is necessitated; while the ear is busy trying to follow the second voice, the first voice starts in with new material which in turn must be followed in the second. The two-part Inventions of Bach follow quite closely the canon form and are not long enough to weary the ear and mind from the effort, but the elaborate canons above referred to are not much more than curiosities of music. The fugue, however, especially as developed by Bach in his great works for chorus, organ and piano, has so much opportunity for creating a diversion and fresh interest that despite a rather severe strain on the attention, it can hold its own as enjoyable music and on occasion move deeply. One voice announces the subject as in the canon, but whereas that form introduced the response on any chosen tone of the scale, the fugue is limited to the fifth—or its equivalent—so that the first suggested modulation is always to 5. Again the fugue is freer in the number of voices, and may have four or more; some fugues even have two subjects moving along side by side without interfering with each other, each with its complement of voices. In a strictly handled fugue for instrument the interplay of voices (as in the canon) furnishes all the harmony; in the choral fugue there may be an instrumental accompaniment that furnishes a harmonic background for the voices carrying the subjects of the fugue. The general plan



of the fugue determines the point at which the second voice gives the response to the subject, usually waiting for the first voice to announce it in full. If there are more than two voices all of them must be allowed to announce the subject in full successively, a third voice on the octave of the first and a fourth on the octave of the second; and until all have had their say there is no tampering with the intervals or rhythmic relations of the subject as at first announced, though the accompanying parts (i. e., the first voice after the second begins its course, or first and second after the third enters, and so on) may furnish new material in figures or phrases that become available for later development. Up to this point attention and expectation are focused on the successively entering voices repeating the same burden with its new meaning in the new pitch; not wholly oblivious to the material introduced by the other parts, which has a familiar sound when it is utilized in subsequent development. After all the voices have stated the subject there follows a passage of more or less freedom in which isolated phrases or figures of the subject may appear, with some admixture of the new material, before the entire subject is heard again. Here the composer has practically the whole range of tonalities to choose from, the only desideratum being satisfactory preparation for the new tonality. A very common change is from major to minor or *vice versa*, with the fresh light that throws on the subject. But here again a full announcement is likely to be followed by response on the fifth as at first, and the full complement of voices may take a turn again. Or one voice may play around the subject, taking characteristic phrases of it in different parts of the scale, while another voice gives appropriate accompaniment. Or while one voice is repeating the subject in its original form another may give it out in diminution or augmentation, or two voices may join in such modification. Or the series of voices may begin giving the subject in inversion. Usually there is full announcement as at first toward the end, sometimes with a stretto, i. e., one voice hastening on the heels of the next (without waiting the usual time), so that in a couple of measures or less the full quota of voices is piled up. A more or less elaborately prepared cadence brings the fugue to a close.

This is by no means intended to be a complete analysis of the possibilities involved in the rather intricate form of the fugue. There are often rather long episodes in which only a part of the voices are employed, a sort of dialogue, while others are in abeyance. But nothing is possible that rises above the mere sensuous pleasure in the melodies and harmonies the composer happens to introduce, no appreciation of its artistic and aesthetic value, unless expectation is wide awake and operative throughout. And in general it may be said that the aesthetic pleasure is directly proportionate to the alertness of expectation. Melodic expectation in nearly every possible form is represented in the announcement of the subject, and this becomes more definite still in the responses of the other voices. Up to this point, until all the voices have been heard, expectation is fully met, with corresponding pleasure. But in case of three or more parts more or less definite harmonic relations have already been established and expectation along that line joins forces with the other lines already in operation. Thus at the close of the first response there is the suggested modulation to 5, a sort of provisional cadence; this of itself begets expectation of return to tonic, which is duly met. In a two-voiced fugue, such as that in E minor of Bach, the harmonic relations are largely suggested by the intervals, a method in which he surpasses any other composer; but the sequences and modulations are clearly indicated, in some cases quite in accordance with expectation (in that fugue), in others with varying degrees of surprise. With three voices the triad relations



are clearly established as soon as the third voice enters and the composer has the harmonic expectations indicated above (III, 3. and 6). It is possible at various points in the development of the voices and accompanying parts to heighten expectation and either give the increased pleasure that comes from its being exactly met, or the new interest, or even shock of a genuine surprise. For instance the main subject may be started up and at once expectation anticipates the entire subject, as at first, to be followed by response on the fifth; having roused expectation to a high pitch the composer suddenly breaks off half way through the subject and begins over again, repeating a few phrases or figures of the subject several times, with the same phrases following along a few beats behind in another part, or with material taken from some of the earlier accompanying parts used as a foil. These phrases may be presented in several different tonalities, which affords other opportunities for surprise of varying degrees. Then again, the entire series of voices may enter in succession as at first, only in a new series of tonalities, adding new interest to each while expectation is fully met from one voice to the next. In one case, at least, the B $\flat$  fugue of Book I, Bach gives a response toward the end on the fourth, giving a sobered touch to the subject and permitting a preparation of the cadence. But, however fertile and ingenious Bach is in creating interest in his numerous fugues—and no other writer in this form can compare with him either for those qualities or for his logical consistency in working them out—there is one kind of surprise or shock which he studiously avoids, evidently regarding it as equivalent to a confession of weakness or defeat; namely, he never introduces (so far as I have been able to examine his works) any additional part or parts for the sake of filling out harmony. In the instance above cited of a fugue in two voices the cadence is made to indicate harmony by the rapid succession of tones 3-5-8;<sup>38</sup> with three or more voices the device is unnecessary.

The fugue is really a triumph of constructive genius, combining as it does the polyphonic treatment of voices with entire freedom in the harmonic sequences and modulations. But it calls both for a certain type of gift and high technical achievement to keep it from getting unwieldy and seeming a strain, a sort of *tour de force*. Of composers subsequent to Bach, Mozart has some examples of the form, handled with great skill though sometimes with more freedom as regards material; the overture to the opera of "Magic Flute" is a brilliant fugue. Beethoven has some rather ponderous efforts; one double fugue in his great "Missa Solemnis" in D with two subjects, another with two subjects is No. 32 of the "Variations on Waltz" by Diabelli, one with one subject is the finale to the great Sonata Op. 106. But he evidently feels the limitations of the form as a constraint instead of an opportunity; to Bach it was as much a native idiom as the sonata form was to Beethoven. It is to be doubted whether Max Reger will be followed by many in his great exhibition of contrapuntal learning given in the closing chorus of his cantata, "The Hundreth Psalm", also a fugue with a double subject, to the complicated movements of which the chorus of brass instruments proceeds to intone Luther's great hymn "Ein feste Burg." The treatment of the voices as well as of harmonic sequences and modulations is such as to leave expectation practically at a standstill; and not only for the listener, but even for a humble participant after severe rehearsing. I sang in it in Leipsig and speak from experience when I say that the marvelous fugue choruses of Bach's Mass in B minor are crystal clear when compared with that one of Max Reger. As hinted above, no other form calls for such close attention in listening and no other has such a definite intellectual flavor and appeal.

(b) **The Rondo.** This is an outgrowth of the song-form and calls for much the same kind of repetition, but it is not only much more elaborate but gives larger opportunities for originality of treatment. Indicating the several sections of a three-part song-form by letters of the alphabet, we may represent it by the formula A B A, where the first section is repeated in full after the second. If a second episode of the same length is added, still there would be expectation of the return of the first and the resulting formula would be A B A C A. To this may be added a D, which again would be followed by A. It can be seen readily that if this form were carried out rigidly and expectation were fulfilled to the end, there would be so much repetition of complete melodic sections as to result in loss of interest, not to say monotony. As early as Haydn accordingly considerable freedom was allowed in the treatment of the returning section A, even to repeating B in part or in full after the C A or D A. It was quite a favorite form for composers for a long period, partly for its own sake, partly as the finale of the sonata. Haydn, Mozart and Beethoven all have quite a number, but the last named has the most original and elaborate development of the form, particularly in sonata Op. 31, No. 3, and in Sonata Op. 53. I shall make the latter the basis of the following analysis.

This rondo has seven parts and may be represented by the formula A B A C A B A. The second A repeats the first without the change of a note, meeting expectation at every point. Both B and C furnish new contrasting material both of melody and harmony, and before the return of A the opening phrase of it is introduced suggestively as a transition passage. This latter phrase is expanded to some length after C and evidently stands as a substitute for the first half of returning A, only the second half being given as it appeared before. B on its return is expanded and instead of containing the minor episode it had before, modulates to 4 and suggests in that tonality the final return of A. The latter is then expanded to more than twice its former length; modulations are introduced, the rhythmic plan is changed, and the theme or suggestions of it are given out in different octaves, all of which leads up to a powerful climax and satisfying cadence.

From the plan of the work it will be seen the composer makes it yield abundant opportunity for the satisfying of ordinary expectation, for heightening it to great intensity, and for striking interest from surprise. Part of the interest comes from the contrast between the theme of A and those of B and C respectively. The former has as its characteristic opening phrase the tone 5 unaccented followed by the same tone repeated on the accent; the melody, after this strong announcement of the strong tone drops at the end of the measure to 3, from which it passes on the accent to 2, then to the lower 5, and returns through 1 to a pause on 3.<sup>89(A)</sup> That is, it deals with one exception in tonic chord intervals, and the composer indicates a discordant blend for his harmony by keeping the pedal down and sustaining both tonic and dominant harmonies to the end of the phrase. The accompaniment is, however, such a gentle murmur at first that the discord seems not to intrude itself. In sharp contrast the melodic phrase at the basis of B is just hinted at by the higher tones of broken chords (given in triplets) as follows: 3-4-3-2-2#-3-2-1; i. e., it is in consecutive steps and half steps.<sup>89(B)</sup> After a repetition (beginning on 5)<sup>89(B)</sup> a minor episode is introduced, at the close of which two tones on 5 of the minor tonic usher in the melodic phrase of A in the minor <sup>89(A)</sup> rather unexpected but very convenient as opening for a modulation back to the original tonality. Here expectation is fully met to the close of A, and the nature of the material

used allows of such repetition without loss of interest. C begins and develops a melodic phrase in minor in which consecutive intervals are prominent.<sup>89(C)</sup> This is extended to about the length of B and leads to a complete cadence in which the closing minor tonic is vigorously asserted. Suddenly the opening phrase of A is sounded fortissimo in heavy chords in the tonality of 6b,<sup>89(A)</sup> and the accented tone 5 is raised an octave above the unaccented, with bass chord leaping also by octaves. This is a complete and delightful surprise and is well worth the two-fold repetition accorded it in the triads of 6 minor and 4 (related to the 6b above). The 4 is then accepted as a new tonality and a long series of broken chords is started flashing up and down, through all tonalities of which the bass part keeps sounding at each change those two tones, unaccented followed by accented,<sup>89(A)</sup> suggestive of the opening melodic phrase of A. This is by way of preparation for return to A, to the tonality of which we are led after a final reminiscence of the 4 from which the series started. This is presented at first under the guise of minor, but after the dominant seventh chord is heard distinctly the original phrase of A leaps forth as suddenly as above but fortissimo and at a later phrase of A instead of pianissimo in the gentle murmur of the beginning. The response in the dominant brings back the expected pianissimo, but now with an entirely new effect after the preceding unexpected fortissimo. Section A is brought to a close just as at first and is followed by the first part of B. Instead of leading as before into an episode in minor the composer builds the second part of B into an expansion of the broken chords of part one, presenting them in octaves and developing them to another strong climax transposed to 5. Through a series of heavy chords he leads again to the dominant seventh chord such as preceded the return of A after C; and A does actually make its final entry, only under quite a new guise. The murmuring accompaniment which before included the four tones 5-1-3-5<sup>89(A)</sup> is here limited to 3-5, and the melody is given out two octaves higher; but the pedal is sustained through the change of chord as before. But the impression of a sort of miniature copy of A is confirmed by the prestissimo of the tempo as well as by the changes above named. The melody is altered in character by figuration and the way is paved for a repetition of the miniature and figuration in the new tonality 4. Without holding this long the characteristic dominant seventh response of the melody of A is given out again pianissimo and certain intervals of it, 3-1-7-2,<sup>89(A)</sup> are used for a descending passage, from the depths of which come flashing up and again down broken chords like those after C while the two characteristic initial tones of the melody A—accented followed by unaccented on same pitch<sup>89(A)</sup>—are constantly suggested in the bass. These lead into a passage of descending and ascending scales in octaves which lead up to that insistent dominant seventh, repeated several times during a sustained trill on 5. The murmur begins again in broken chords and while the trill is sustained the original melody of A appears in the upper octave in a kind of augmentation. This rearrangement is carried through the absolute minor to 6b, from that as a new tonality to its relative minor and finally to the original key with the melody of A with full chords.<sup>89(A)</sup> From this point to the end he builds up an elaborate cadence with the tones of that melody and their figuration as before employed, ending in a several times repeated tonic. The variety shown in introducing the melody of A, the figuration, the changes in the quality of the murmur, the heavy chords with their modulation, the broken chords, all these are of the nature of surprise with which again expectation blends most naturally and easily. The Rondo as thus developed by Beethoven stands a close second in the homophonic type to the fugue of Bach in poly-



phonic music as a field of exercise for genius. Each has its limitations different from the other; each has its special opportunities; it takes a master to make the best use of both.

(c) **Sonata.** The sonata form, technically speaking, is used only in the first movements usually of works of the type. Symphony, concerto, quartet, trio, as well as sonata for piano, violin, or cello, have a first movement built on this plan; sometimes more than one. The idea of a succession of movements grew out of the so-called suite, which was much cultivated in the XVIIIth century, and which amounted to little more than a succession of dance pieces arranged in a great variety of ways, beginning usually with a free prelude and often containing an air not tied down to the rigid dance form. Among these dances were often some of a three part song-form, A B A, in which the original melody or theme was re-asserted, often quite strictly following the first statement. As skill in developing a subject was acquired by composers, and still more as freedom and the use of harmony and modulation grew, it was found that this three part song-form had great latent possibilities of expansion and expression. One of the first innovations that established itself was the introduction of a second subject in A, and the rule was to put it into the tonality of 5 by an easy modulation. In the return of A (after B) this second subject was left in the original tonality; and A having led the first time to a cadence in 5 now in its return leads easily to cadence in original tonality. The first time all following the entrance of the second subject is in the modulated tonality down to the cadence; the second time it is all in the original. Thus if the sonata began in the key of G, the second subject and following cadence would be in the key of D; on the return of that second subject it would be in the key of G and would lead to cadence in that key. This first part, containing two subjects and cadence in 5 was as religiously repeated as any dance form. Then follows the second important innovation, the treatment of B. A had besides the two subjects certain other figures or scale passages to make transition smooth from one subject to the other; and B was made a sort of free exercising field for all of the material already presented in A. Either subject and any of the figures or scale passages were presented complete or in fragments, in new combinations and guises. This ended in a dominant seventh chord prolonged, after which the first subject of A re-asserted itself. The principal chance for free modulation was in this middle section, taking the place of B. The repeat was not for B separately, on account of that dominant seventh, but for both B and A.

Rigid as this simple form seems to us after the freer handling of the sonata form to which we have become habituated, it will be seen that it is a great advance on the simple A B A song-form. It is capable of considerable extension and something approaching architecture, while the chances for creating heightened expectation and fresh interest are far greater. One disability it suffered from is the inevitable modulation to 5 for the second subject. This will appear from the following statistics compiled from sonatas for piano and for violin and piano, and symphonies and concertos of Haydn, Mozart and Beethoven. Two hundred and twenty-five compositions were examined; out of these one hundred and seventy-five had that modulation to 5 clearly marked. Of the remaining fifty twenty-one were from minor to major (in some cases then to 5), which hardly count as exceptions; eleven were from major to minor, which amount to an evasion; and the balance were all in Beethoven's later sonatas, including four modulations to 4, one to 3b, one to 4, one to 7, two to 6 and one to 6b. It should be stated that not all the movements thus inspected were in sonata form; the list includes also slow movements, minuets and scherzos



with their trios, and the rondo-form finales as well. The probabilities are that a full examination of all symphonies and chamber music of Haydn and Mozart would not reveal as large a proportion in movements of strict sonata form where any other modulation was used; minor to relative or absolute major not counting. As noted above Beethoven broke through the convention in a number of his greatest works and later writers have added still more to its flexibility in the matter of modulation.

In the statement above it was not meant to assert that Haydn and Mozart do not use other modulations; in the freer section of the sonata known as development they resort to quite a variety of tonalities. But in the first section preceding the repeat—when it is sonata form—in the overwhelming majority of works the first modulation presented is that to 5, and in about the same number of cases the second subject and cadence are given in that tonality. With Beethoven the majority is only slightly smaller, i. e., for that particular point. Taking these facts into account it is not any exaggeration to say that the expected modulation in the first section of a sonata-form movement is that to 5, and that the aesthetic effect of a different modulation is based largely on this expectation. It is not always presented at or even very near the beginning of the section, though Haydn seldom does anything else. Mozart shows more ingenuity in his way of introducing it, seeming at first to lead away from it by suggesting more remote modulations; but it is merely a postponement with resulting heightening of expectation and pleasure of satisfaction when it is fulfilled. Beethoven shows even greater ingenuity and boldness in suggesting remote tonalities suddenly, as in the opening of Op. 31, No. 2, Op. 53, and Op. 57. In the first of these he announces his first subject in the dominant chord,<sup>90</sup> but after the response that comes to a quasi cadence in the same chord he suddenly announces it again in 7b,<sup>90</sup> 7 having just appeared in the previous chord. From that rather remote tonality he leads by a series of runs suggested by the response into the tonic where the formal announcement is repeated and this time is brought quite directly into the dominant minor. In the second (Op. 53) the announcement of the subject seems to land us in the dominant at once for a response; but without continuing in that tonality he suddenly repeats the entire announcement, response and modulation included, in 7b, like the last mentioned. But he comes back presently to the announcement in a higher pitch, and this time brings us by easy stages to the tonality in which the second subject is to be presented, which is not 5 in this case, but 3.

In the third of the above sonatas, Op. 57, after stating the subject in the minor tonic, followed by response in dominant, he restates both a half-tone higher in major, 2b.<sup>91</sup> By an equally sudden leap he comes back from the dominant of that response to the former tonality, and then proceeds to prepare for his second subject which is introduced in the relative major. A somewhat similar course is taken in his G major Concerto; here after announcing his subject in the tonic and coming to a pause in the dominant he leaps suddenly into the tonality 3<sup>92</sup> and takes up passage work leading to the second subject, this time in 5. The charm of these different innovations—for such they are—lies, to a large extent, in their departure from the expected modulation to 5.

But there is another point in which expectation has grown to rather definite shape in the classic sonata, especially as treated for the pianoforte, though it appears also in chamber music and somewhat in symphonies. It is the nature of the passage work which furnishes the transition from one subject to another, or from subject to cadence. Haydn limits himself almost exclusively to scale phrases and runs

and they are used so persistently and regularly as to grow monotonous; too much repetition and not enough of fresh interest (for us.) Mozart is much more fertile in invention and often inserts a new melody instead of a scale; or he has runs of a different character with often a fresh tonality suggested. In Beethoven's earlier sonatas the scales still predominate, but in later ones he has far greater variety of figuration, depending on that rather than on fresh melodic material. Moreover, he connects his figuration with phrases of his subjects, thus exhibiting these in new lights and securing greater unity of impression, while maintaining wise economy of melodic material. Schubert, though usually prodigal with his melodies, is not closely logical in his structure, and scale passages are used almost like padding in some of his sonatas, though others are comparatively free of them. It remained for Schumann to compose an elaborate sonata, as long as the longest of Beethoven (Op. 106), without a trace of a scale passage strictly speaking from beginning to end, that in F sharp minor (Op. 11). In this course he has been followed by others, notably Brahms in the F minor, Op. 7. Such an innovation is especially noticeable in the first movement as transitions are more in demand than in minuets, scherzos or rondo-form finales. In order to point out the difference more clearly in works of different type it will be helpful to subject two first movements to a somewhat closer analysis; choosing two mentioned above, namely the Op. 53 of Beethoven and the Op. 11 of Schumann.

As already stated in another connection Beethoven announces his subject in the tonic, then at once repeats it a whole tone below with the tonality  $7b^{99}$ . Out of this he leads easily through scale passage ending in a long descending run to tonic, suggested in minor. But the subject is resumed an octave higher (it was quite low at first) and in figured chords, two slight surprises. But the repetition is more of a surprise, being raised a whole step and given in minor, and the provisional modulation leads to the relative minor of the original tonality. From that minor we pass on to its dominant, still in minor through scale passages. But at the end of these the change to major is made, resulting in 3 of the original tonality. In this key the second subject is announced, a simple melodic phrase 3-2-1-7-6, with return in response back to 3, all with heavy chords. Repeated an octave lower it leads to a complete rising cadence. Then while the left hand repeats the entire subject the right gives a light variation of it an octave higher. After the cadence some of the chords used in the subject are made the basis of prolonged figuration all in the same key, slightly reminiscent of the cadence; these lead into scale passage work which in turn leads into a provisional cadence, still in the same key. But the passages following that lead into minor and thence by an easy transition to original tonic, from which repeat *da capo* is natural. The second section (after the repeat) is ushered in by easy modulation to 4, in which tonality the main subject is restated. The first part of it, rapidly repeated chords, is then dropped out of sight and the second part consisting of a short melodic phrase (1-3-2-1) is then elaborately developed; repeated in upper and lower octaves, extended by adding 5-4 to 3-2-1, and the two phrases are given alternately, all this in nine different tonalities in rapid succession. In the later stage of this the left hand has taken up the broken chord figure foreshadowed in the first section and this is now developed in both hands passing through a series of modulations each successive one with an added flat until an enharmonic change results in five sharps, B. B. minor brings us through G back to the tonic and after a passage, in which melodic fragments of the main subject appear, a long descending scale plunges us without any pause into the

rapidly repeated chords of that subject. Instead of proceeding from this point to the second subject just as in the first section, he lays his lines before long for the changed tonality of the second subject and then from this vantage ground the melody with full chords is made to seem inevitable in the subdominant of the former tonality. The higher pitch as well as the new key relation give it a fresh beauty, and we fully expect to hear it repeated an octave lower. But here Beethoven gives us a sudden surprise by dropping it into absolute minor, and then consoles us by giving the variations and left-hand melody in the original major tonality of the sonata. From this point for some space the figured chords (following the cadence of this melody) and passage work resemble very closely the corresponding part of the first section. But another surprise awaits us; for after making ready apparently for a cadence he introduces the first subject half a tone higher than before and presently it is heard in the bass against the high chords of the right hand. This is the opening of an extended crescendo with the main subject urgently reiterated in left hand rising step by step, while the right hand accompanies it with ascending and descending scale passages. After a powerful climax the passages bring us out on two long-sustained dominant seventh chords. From them flows in the original tonality of C the melody of the second subject, first at low pitch, then an octave higher—reversing the order that was given before in both sections and so surprising us with charming effect; and now follows the twice interrupted cadence already described above (III, 4 at the end.) But complete as this is the third time, it is too quiet for a work of such impetuosity and dimensions. The entrance of the tonic is the signal for a brief restatement of the main subject and its little melodic phrase, then after a converging scale run in both hands there follow a few ponderous chords in the sequence sub-dominant, dominant, tonic, dominant, tonic; this last closes the movement. It is evident that the composer has in reality comparatively little thematic material: the main subject and the second subject in strong contrast with each other. For his abundant passage work he resorts to phrases of one or both of these subjects and depends on the novel setting of each to maintain interest. Expectation is repeatedly fulfilled quite exactly, but quite as often foiled with great pleasure of surprise. In the climax described there is a piling up of expectation from point to point; while in the interrupted cadence it becomes acute in a different way after waiting twice in vain. This study shows the possibilities of a close and logical structure—architecture, we may well call it—in working up a powerful emotional effect. It is one of the noblest triumphs of form as an aesthetic principle, making available for high and pure enjoyment material that in an isolated existence or rolled together carelessly would have at best but a mild sensuous pleasure to yield us. The careful elaboration of inconsiderable material into a work of art that gives everywhere the impression of abundance is an achievement for the few. A comparison of this sonata with the Op. 11 of Schumann shows marked contrasts in method and type of workmanship. Not that Schumann is careless or indifferent about form; for there is closer unity of structure in this sonata than it usually has credit for. One striking difference is that he announces at the outset two strongly contrasted subjects which he proceeds to play off against each other through the large part of the movement. But not satisfied with these, he introduces two other important subjects, while yet a third is of some weight in the total structure. Another difference is the total absence of scale passages, their place being taken by material furnished in the main from the various subjects. Yet another difference is in the attitude toward modulation, as if it were a more fluent and native vehicle of expression.



Moreover Schumann handles chords more massively, thickly sometimes, than Beethoven; while he is even more repetitious in one particular way, in that having presented a beautiful phrase he repeats it *notatim*. This last he avoids, however, in great climaxes as carefully as does his predecessor. His manner of treating his material in this particular sonata is due no doubt in part to his effort to suggest two complementary personalities, Florestan and Eusebius.

He chose the key of F sharp minor and begins by announcing his first subject, which we shall call here I, in the dominant. This is not so capricious as it sounds, for a long introduction has preceded the main movement with a sort of suspended cadence in F sharp minor, from which that dominant comes more naturally. The second subject, which we shall distinguish as II, is given immediately in the tonic, but the responses in the bass lead into several modulations before the tonic is reached again; the last modulation is to the dominant, and at once both hands in octaves re-assert the first subject I. The entire passage beginning with the subject II with its responses and modulations is repeated, with slight changes, up to and including the octave re-assertion of I. The two subjects are given together once in the tonic and soon we hear the first announcement of III; this leads up to a pause that leads us to expect the dominant as new tonic; but the tonality is evaded and subject IV is announced in a tonality a half-tone lower. The kind of broken chord figuration used for this serves almost as a disguise and the real character of the phrase is discerned only by careful attention to the accents indicated by the composer. It amounts to the following melodic sequence in minor: 8-7-11-10, and after being exactly repeated descends by the steps 8-7b-6b-5 and comes to a pause with 3-2-4-3; the tones in all these being virtually of the same length throughout. It may as well be mentioned here that the entire sonata receives an impression of a large unity, of being rounded off to a completeness, from the fact that this subject IV is introduced in the closing passage of the last movement and made the starting point, in major this time, of a powerful climax. It is so prominent in the first movement in minor that its return with more easily recognizable figuration and in major is particularly pleasing. The tonality of IV is E $\flat$  minor which is virtual relative minor to the major of the original tonality of the work, a major that seems several times on the point of emerging and in fact does emerge in the second section of this movement. In that key of E $\flat$  minor subject II returns by itself, passes by whole steps to G $\sharp$  minor and B minor and by an easy transition we are brought to what from one point of view is subject V in A major, relative to the original F $\sharp$  minor. When closely examined, however, it turns out to be identical with the descending phrase of IV, only in major: 8-7-6-5 in tones of equal length. The entire passage from this point to the close of the first section is built on that sequence, which is repeated at different parts of the scale, in inversions, and appears ascending twice in succession thus giving the only semblance of a scale in the entire section. Here Schumann uses a device that is found often in his works, but hardly ever in Beethoven; he reinforces the melody of this last subject by giving it in three places at once an octave apart, the right hand giving it in octaves and the left supporting it an octave lower; and this entire apparent scale passage is repeated in full, like so many in the whole sonata. A complete cadence follows in A major after a series of descending chords, with a reminiscence of subject I in the low bass; the melody tone of the cadence is 3, instead of 1. In the development section now taken up, the four subjects of the first section furnish all the material. After a brief reminder of subject II in the original minor an easy modulation restores the A major of the preceding



cadence and subject III is restated in that key, leading to a fascinating conclusion with leaps of chords. This is repeated in the key of D (one sharp less). The same sequence serves for an original restatement of subject I; while the right hand is playing a broken chord accompaniment the left plays I alternately above in high treble and then two octaves below in A major and again in D major. This is one of the freshest surprises in the entire work. Then follows in the last mentioned key and half hidden in the middle voice the descending scale phrase of subject IV; it is repeated twice, each time a whole tone higher and in minor, then the entire subject IV is restated in full as in the first section but in the key of C sharp minor. In this last key subject II is restated in full very much in the same way it was at the beginning of the first section in F sharp minor, and in the process the F sharp major glimmers through. Subject II starts out again in the same key (C sharp minor) but by a series of surprising modulations works up to another powerful climax. It passes through E flat minor, F minor, G minor, B flat major, B flat minor, and ends at F minor, during all which subject II is relegated to the left hand and the lowest part. The dominant chord in the closing key of this series has just sounded, leading us to expect resumption in the tonic, but the surprise awaiting us is entire suspension of this interplay of subjects while the broadly sweeping melody of the introduction is carried through a few phrases leading to a quasi cadence in G sharp minor. Here follows in cognate tonalities almost an exact replica of the passage just after the close of the first section; subject III following a brief reminder of II, proceeding by those sudden chord leaps, repeating in the related tonality, then the statements of I alternately above and below the broken chord accompaniment. And this as before is followed by the same hidden re-statement of IV, beginning this time in E major but swerving into the original minor of F sharp, then modulating as before by whole steps into F sharp major, and G sharp minor and enharmonically into B flat minor and finally into E flat minor, in which last key the other phrase of subject IV is given twice entire. Then the former phrase (4 descending scale tones) is taken up anew as the upper tones of broken chords, the phrases are given alternately—all this in the key of F sharp major—then while the broken chord work continues as a sort of accompaniment suddenly subject I is heard as the lowest part, first in its original shape 2-5, 2-5, then in full octaves with octave leaps in F sharp and suddenly repeated in part in the key of G (dominant seventh chord) and again in F sharp, after which a short passage of leaping octaves brings us to the subject I stated with ascending interval, 5-8-5-8-5-8, in major and full chords in both hands; creating the most powerful climax as well as surprise in the whole movement. From this point to the cadence Schumann follows closely his course at the close of the first section. Subject II is resumed so quietly as at first to seem almost like an anti-climax, but as it proceeds, back in minor again, it becomes evident that any elation of expectation based on the major climax was misplaced and we are to close in sombre, not to say melancholy, mood. The scale phrase of subject IV is again made to serve as closing subject in the original minor, with the same doubling of octaves when it rises in close semblance to a scale passage more than an octave, and closes as the first section did with the tones of subject I heard from the depths pianissimo while the melodic cadence is on 3. After that great climax this descent is far from expectation and the effect of it for that reason is deeply impressive, though sensuously it is a less pleasing close than that of the first section.

Whatever verdict may be reached as to the comparative perfection of form of these two sonata movements—and it can hardly be denied

that Beethoven's has a closer logical texture and coherence—from our point of view there is little to choose. The interest of expectation and surprise which the older composer secures by ingenious, even imaginative, elaboration of a small amount of actual melodic material, the later gains by playing off more material in fresh combinations; moreover in this particular instance he has the advantage of starting out in minor which gives more easy opportunity for rousing expectation and preparing surprise in connection with turning to major. Further, whereas Beethoven depended largely on scales for passage work, Schumann avoids them altogether and resorts to rather fresh broken chord work with double notes, and close inspection shows that he is at the same time giving a fresh turn to his subjects in the process. To get the full benefit of this by way of expectation a very intelligent rendering and also intelligence in following is more called for than in many sonatas, but it is all there for delightful appreciation. There is also a sort of unconcerned freedom about his treatment of modulation that Beethoven had not acquired, though it appears less labored with him in the first and third movements of his Op. 106, than in this Op. 53. On the other hand the postponed cadence with its tensivity of expectation is not equalled by anything in the sonata of Schumann, if the latter's climax in major is beyond anything in the older work. Both are fine examples of the capacities latent in the sonata form in the hands of a master for massing effects and especially for utilizing expectation, even though it be built up more freely, less according to precedent, as Schumann did construct his.

As hinted before the first movements of violin and violoncello sonatas, of chamber music for trios, quartets and other combinations, and also of all symphonies and concertos for piano or violin with orchestral accompaniment, are more or less closely of sonata form. In all of these the composer has far ampler opportunity for rousing expectation and for preparing surprises. The different timber of instruments in the statements and restatements of subjects, in all kinds of imitation and thematic development, are one source of pleasure in such works. If a clarinet begins a melodic phrase that has been heard in the violins, it is fully expected that the phrase or subject will not be chopped up and different fragments be distributed to different instruments. This is but another way of saying that some kind of continuity in the handling of instruments is fully expected as well as in the treatment of thematic material. If, for example, the little halting melody characteristic of De Bussy's "*L'Après-midi d'un Faune*" after being heard entire on the flute should later be heard part way on the flute—say two notes—then were continued on the clarinet, then picked up by cornet and finished by violins, it would so far defeat expectation as to lose its character and effect entirely; it would seem like a musical jest that might have its place as a jest under some circumstances but would hardly be in keeping with the spirit and atmosphere of a characteristic work of that type.

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## V. EXPECTATION AS IT APPEARS IN INTERPRETATION

1. **Rhythmic Accent.** It has already appeared in our discussion above (v. I) that rhythm is a fundamental and pervasive element in music and is a basis constantly for expectation. Such expectation is naturally most alert and operative with those listeners who have a considerable capacity of subjective rhythm so that any series of tones and harmonies falls for them into some sort of rhythm. But a performer cannot depend on many in an audience having this capacity; indeed some are quite deficient in that direction, and for them the rhythmic accents need to be strongly marked, or else the music seems defective, amorphous. For many, who are utterly incapable of originating a rhythm subjectively, respond quite readily to its force when it is objectively clear. It is not meant that time must be marked by twos or threes or fours, just as it is indicated at the beginning. And yet it cannot be denied that such marking of time is at the root of the whole matter. Many who are wholly incapable of following the broader sweep of a subtle yet real rhythm, whether in music or speech (poetry or prose), have this simple accentuation and its appropriate response deep-seated in their constitution. In fact, so inveterate is this inherited bent or gift that any attempt to set music before them without any rhythm, a sort of sensuous sweetness in more or less continuous flow, without light and shade or high and low of intensity, would prove a total failure; it would not be music for them. And if we may judge by the persistent hold that prevailing popular songs and instrumental pieces for piano, or small orchestra and band, have on public favor, it must be admitted that except in the ranges of serious and sincere art the easy, straight rhythms by twos and threes and fours occupy the field, that the less obvious and subtle rhythms must for some time yet endure the general reproach of the "highbrow." And yet, when we are studying the psychology of music as a universal phenomenon the obvious and easily intelligible must be subjected to as searching an analysis as the more profound, which we may recognize indeed as the higher type of art and more worthy of cultivation by serious-minded students, but which is much more limited in its range of appreciative appeal. While we may leave to the theory of aesthetics the question whether there is any reality of art where appreciative response is lacking, it is a question of direct importance to us from the psychological side whether to rule out of court as inartistic and not worthy of consideration the musical activities of those who depend for their aesthetic enjoyment on the simpler and more direct appeal. They are just as truly within the scope of such a study as the serious artist, and for them without question a failure to hear definite and regular rhythmic accents would interfere with enjoyment, and largely because expectation would not be satisfactorily met.

2. For the primitive man, and likewise for the student of voice today, there is close connection between intensity and pitch. It is found to be difficult to increase the volume of tone when the pitch is stationary or descending and conversely to lessen the volume when the pitch is rising. This is a natural basis of expectation for singing and the same expectation is transferred to instrumental progressions. A chorus or any orchestra seldom need special training for a light crescendo in a rising sequence or *diminuendo* in a falling sequence; but the contrary procedure would call for careful training. The

listener is also under the same law and conformity to it would bring satisfaction, while special attention with degrees of surprise and interest would result from an infraction of it. A crescendo in a descending series of tones or diminuendo in an ascending series is more effective with the same difference of intensity involved than the opposite, just because it is contrary to expectation.

3. Owing to the prevalence of repetition in the structure of musical compositions expectation is active not only for the melodic and harmonic sequences as they recur but for the way they are rendered as well. The first rendering of a phrase that is to be repeated a number of times sets an interpretive pattern for the whole series, and when the phrase begins the second time the more or less clear memory of the first leads to expectation of close following of the pattern, and satisfaction as this is noted step by step. But just as the composer can create fresh interest by modifying the sequences, so too the performer may introduce a new shading, a slight change in tempo, and avoid the effect of sameness and monotony. A group of performers is, of course, subject to the same restrictions as one, being under the direction of one leader; and personality can make itself clearly felt in the thoughtful use of variety of rendering for the same sequences.

4. Custom has its large influence in interpretation as elsewhere. In some nations where harmony is not in use its place is partly supplied by a use of the voice which to cultivated audiences would be distasteful. Thus in India singers in public seek to give expression and variety to a melody by numerous intermediate tones with a sort of quaver in the voice; this is expected and is listened to with far deeper satisfaction than a different style would be: the full steady tones and clean-cut intervals such as occidental audiences of advanced culture called for in the singer. The latter type of audience would be likely to greet the former type of artist with laughter; the surprise would be so keen as to pass the line into the ridiculous.

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## VI. ANALOGIES IN OTHER ARTS

Expectation plays a role in every-day life, in such matters as social conventions, manners, costume and the like. In many cases surprise occasions less of pleasure than of disgust or ridicule in these spheres of life. The necessary conformity to well-established custom or rule to maintain comfort in smoothness of mutual relations causes us to feel keenly any disregard of convention. We are here even on the border line where the ethics and aesthetics of daily life meet; for many customs of one country involve gross insult and even moral obliquity in the eyes of those from another country. This is the realm where habituation accomplishes its work for social intercourse and finds its way by fine gradations into the nicer distinctions of art. Reference has been made (especially in the Introduction III, 1 and 2) to certain differences between music on the one hand and some of the other arts on the other hand. It will be of interest to point out briefly some closer analogies.

1. In poetry the closest analogy appears between the recited poem and song rendered. In both there is the rhythmic utterance of intervals which even in the spoken sentence have melodic phrases. In both there is rise and fall of voice following the emphasis of thought. In both finally is a cadence at the close, which is felt to properly conclude the series of sounds. Among the Greeks the two virtually merged in one. But with our elaborate system of music the song has its accompaniment fitted to the melody and its series of expectations on the musical side is quite independent of those growing out of the sequence of thought, though a careful interpretation will avoid marking the difference too clearly. In the spoken sentence the melody sequence may be repeated with very close exactness a number of times without causing monotony of effect, because a certain type of inflection—with fall at the close—is best adapted to express the thought in a simple declarative sentence; and while the rhythmic flow has its element of pleasure, the principal aim of the listener is to secure a clear succession of images and thoughts. A faulty inflection, such as leaving the voice on a high pitch in a positive statement, or dropping or raising the pitch suddenly without occasion at some hap-hazard point, or a falling cadence in a question or some negations, would interfere so decidedly with expectation that the thought would often be practically lost, and always weakened. In the reciting of prose, in oratory, the rhythm would be less regular and subtler, approaching at times what we know in music as syncopated rhythm\* with *rubato* effects, and also with occasional more or less regular swing. In the matter of sentence-melody and inflection (including especially cadence) there would not be so much difference. Sudden changes and departures from a simple inflection could be made to combine with peculiar words or far-fetched images to secure a humorous appeal with laughter. It is a point well worth investigation how far music, without any words to evoke clearly defined images or thoughts, can convey or embody humor that is generally recognizable as such. I have had music described to me as deliciously humorous in which I had never discerned that quality. In songs and music-dramas, where words and action combine to define images or thoughts it becomes an entirely

\*Patterson, Op. cit. passim.

different question; with such images in mind or actually before our eyes the appropriateness of musical surprises would be felt, when without the images the majority of an ordinary audience would simply wonder what on earth the composer was trying to do.

2. **Drama.** Here the acting adds another element of succession to the spoken word and thereby opens up a new source of expectation, while on the side of utterance what has been said above would apply with equal justice. Habituation and convention both play an important part and in different nationalities they present striking differences. In the Chinese drama it excites no surprise to see attendants changing properties while the action still goes on; but in European and American drama for the most part the effort prevails to keep the machinery out of evidence as interfering with the illusion. Then in the action itself there are stereotyped gestures for certain emotions or efforts. In the Hindu drama strong excitement is commonly expressed by an actor by a leap into the air while his feet nearly touch each other. This attitude is often depicted in paintings of heroes of the Hindu drama and is expected fully in the drama itself, yet during many years residence in that country I never saw a man in that attitude in actual life. The classic drama in France held the convention that no act of violence should be represented on the stage, and it was felt as an outrage on the fundamental principles of dramatic construction when the Romanticists indulged themselves to the point where it was hardly felt to be dramatic unless there was violence. Then in the matter of the unities some playwrights and audiences were satisfied with what others felt as an unwarranted restriction. But hardly in any branch of the drama are conventions so strong or numerous as in the opera, where actors are allowed with no expression of surprise, but rather with the highest satisfaction, to do what nobody ever thinks of doing in actual life. Audiences prove how little they care for the real meaning of the action by compelling the hero to sing his declaration of love or his death-song *encore*; which is fully as absurd as to have properties changed during action and interferes more with the movement of the drama. Judging from observation the majority of an audience in the ordinary play, or even in many a serious drama that aims to present a convincing illusion of real life, are better convinced of lofty spirit in a man by the stagey pose, or of strong emotion by the affected strut and loud declamation, than by the simplicity of demeanor they see every day. It is as if these somewhat extraordinary attitude and action were accepted as visible symbols of unseen mental states which would not seem to be present if the appropriate symbol were wanting.

But aside from these conventions there is constant expectation operating in the demand for continuity and consistency of action, and corresponding satisfaction, or surprise, with attendant pleasure or disappointment, according as the action meets the expectation or falls below it. When, for instance, an occasion for violent passion is taken too tamely, or a mild excitement is turned into a sort of riot, the discrepancy jars unpleasantly. And as the play proceeds the suspense both of uncertain questioning and of confident expectation are heightened by the combining of different threads of action until a climax is reached and relaxation with relief follows the denouement. And there is aesthetic pleasure in that even though there were painful emotions stirred by the special character of the ending—as in a tragedy. On the screen expectation from the very beginning of a six-reel feature-film holds constantly before the spectator's mind the conventional closing scene—with variations only in minutiae—where all difficulties are overcome and the struggling hero and heroine are united, and he feels a real lack if he does not actually see the prolonged kiss. It is

doubtful whether any producer would dare to disappoint the audience by a genuine tragedy, though they all aim to produce fantastic surprises with humorous intent in their comedies.

3. In fiction, the effort of the author is to conjure up the scene and action to the reader's imagination; but in portraying character and in dialogue and representing life the purposes are fundamentally akin to those of the drama, and many conventions and habituation enter in to modify the operation of expectation. One special advantage fiction enjoys grows out of the abundant opportunity it affords for the analyzing of situations and character; it makes it possible to heighten expectation by pointing out the potentialities involved and by postponement. Suspense can thus be rendered almost painfully acute. The author can play on the feelings of the reader by emphasizing his doubts and fears until the relaxation at the climax which clears all difficulties brings a real thrill of relief. This resort to the imagination is denied to music and such violence of feeling can hardly be created without its powerful aid. Moreover the dread and hope roused by a well wrought illusion of real life are of a nature foreign to the aesthetic expectation that operates in music or the plastic arts. The musician who experiences a thrill of relief when the suspense of a long-sustained discord is ended has felt neither hope nor dread of good fortune or calamity which involve himself or people in whom he has become interested. It is of the essence of the novelist's art—and the same holds true to a certain extent of the dramatist—to so engage the reader's interest in the characters and their destinies that he in a measure identify himself with them. For such results the stimulation of the imagination by vivid and definite pictures, which must be intellectually apprehended, is indispensable.

Hope and dread are akin to the expectation in music in this respect, that they occasion (like it) a nervous tension which then is followed by relaxation when the denouement brings relief. But the rhythmic feature so prominent in musical expectation is wholly lacking in fiction (in the high emotion, not in the arrangement of words or sentences); whereas the expectation in music may recur with clock-like accuracy and please repeatedly.

4. In the plastic arts there is absent the succession which gives the opening for expectation in music and those above discussed. The aim of a work of painting, sculpture, architecture or design is to present a certain collocation of objects (colors, lines, etc.) that are to be apprehended as a unit within the span of vision. In this unit the symmetry, the light and shade, the composition, the color scheme, are visualized in their completeness and achieve the intended aesthetic effect only under that condition. Then the observer may let his gaze pass from point to point—if it is a plane surface—or from side to side—if it is a solid—and so create a subjective succession; in this there is a possibility of a slight degree of expectation and mild surprise. The connoisseur or artist would find a certain delight in perceiving by what handling of material the effect was secured, how far regularity and exact symmetry were observed. But the ordinary observer, who corresponds to the ordinary listener in a concert, hardly develops a minimum of expectation or feels the least surprise at anything he sees. It is hardly natural that he should; if he enjoys or is inspired by the ensemble, the chief—if not only—aim of the artist is fulfilled. But the composer counts on the essential succession of sounds, on the series of spans necessarily involved in the creation of his work of art; he chooses one order of succession rather than another because it is, or is not, definitely expected, and secures the effect he seeks accordingly in the satisfaction or surprise.

### SUMMARY

1. Expectation, and its correlates of fulfillment and surprise, constitute a basic and universal element in the enjoyment and appreciation of music.

2. As a source of aesthetic gratification it differs from the sensuous appeal, the somatic response of rhythm, interval and chord and their combinations, in that attention is more alert and the intellectual factor more prominent.

3. The operation of expectation is not confined to any one system of music but has its place in them all.

4. The more complex the system of music the more opportunity for expectation and its effects.

5. The operation of expectation in any given case is largely dependent on habituation, in degree and kind of action.

6. There are special reasons in the facts of succession and repetition why expectation is more active in music than in any other art, dancing being the nearest approach.

7. The difficulty experienced in securing recognition for innovations in music is due largely to the necessary re-adjustment of expectation when it is thwarted by the strange, as well as the mere difficulty of habituating the ear.

8. Aesthetic pleasure and interest can be much increased by the heightening of expectation whereby both satisfaction of relief and surprise are heightened.

9. There is opportunity for expectation in each of the constituent elements of music, rhythm, melody, harmony and form—and likewise in interpretation—and development in any element gives larger scope for its operation.

10. The combination of these elements in modern occidental music makes it possible to create climaxes of intense suspense with corresponding relief and aesthetic delight.

11. Expectation may not be consciously sought by the composer or its operation consciously noted by the listener who enjoys his work. But it is the operation of it that leads the composer to adopt one sequence rather than another, and that contributes a vital share to the enjoyment of the listener.

12. Even after one is familiar with a composition so that there is intellectual certainty as to sequence, i. e., no suspense, the enjoyment is not lessened; that part of it which grew out of expectation is still active.



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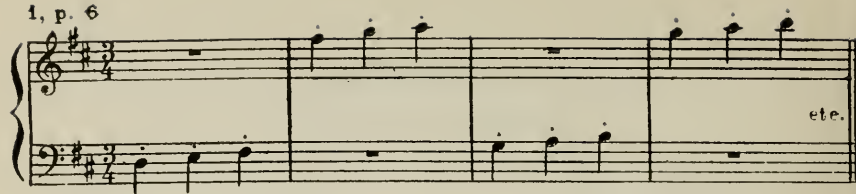
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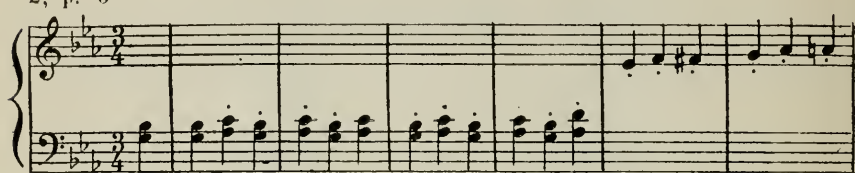
(Studied or Considered)

Abt	MacDowell
Arensky	Mendelssohn
Bach, J. S.	Merkel
Bantock	Meyerbeer
Barnby	Monteverde
Beethoven	Moszkowski
Berlioz	Mozart
Bishop, Sir H. R.	Nicodé
Bizet	Ornstein
Brahms	Paderewski
Bruch	Palestrina
Buck	Parker, Horatio
Chabrier	Piérné
Chadwick	Purcell
Chopin	Rachmaninoff
Clementi	Raff
Cui	Rameau
Debussy	Reger
DeKoven	Reinecke
Di Lasso	Reubke
Dubois	Rheinberger
Dvorak	Rossini
Elgar	Rubinstein
Faure	Saint-Saens
Flotow	Scarlatti, D.
Foote	Scharwenka, P.
Foster, S. C.	Scharwenka, X.
Franck	Schubert
Franz	Schumann
Gade	Sousa
Gaul	Scott, C.
Gluck	Scriabine
Goldmark	Shelley
Gounod	Sibelius
Grieg	Spohr
Guilmant	Strauss, J.
Handel	Strauss, R.
Haydn, F. J.	Sullivan
Heller	Suppé
Herbert	Thiele
Humperdinck	Tschaikowski
d' Indy	Verdi
Jensen	Wagner, R.
Kirchner	Weber, C. M.
Kjerulf	Widor
Lassen	Wolf, H.
Liszt	Wolf-Ferrari

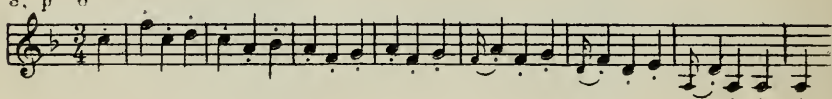
1, p. 6



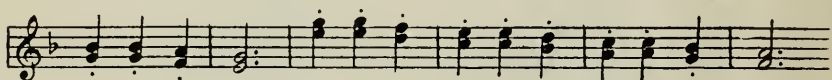
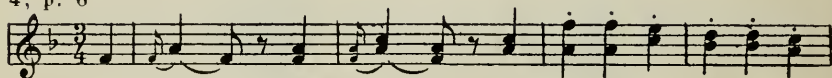
2, p. 6



3, p. 6



4, p. 6

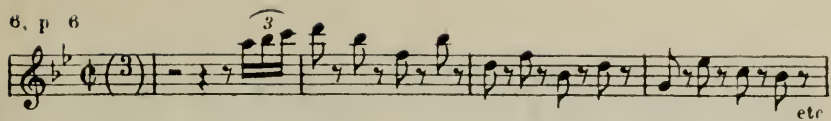


5, p. 6

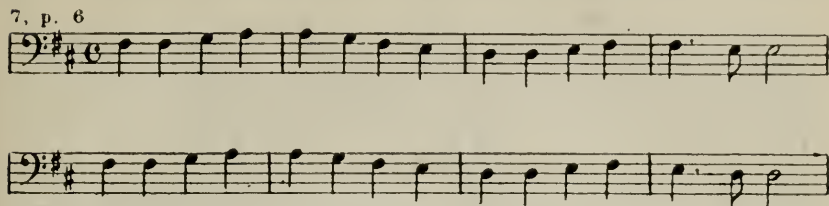




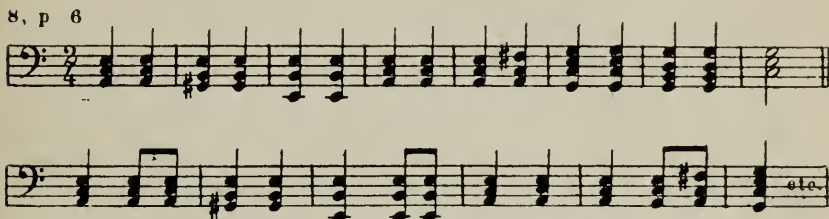
6, p 6



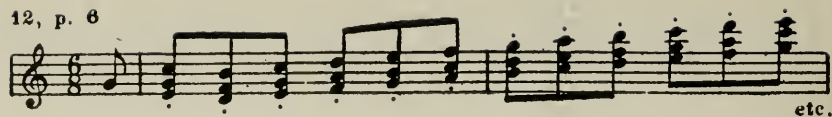
7, p. 6



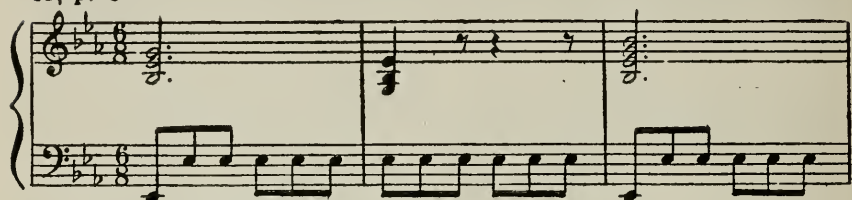
8, p 6



12, p. 6



13, p. 6



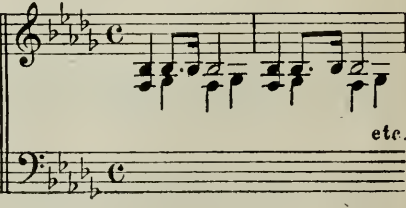
14, p. 7



15, p. 7



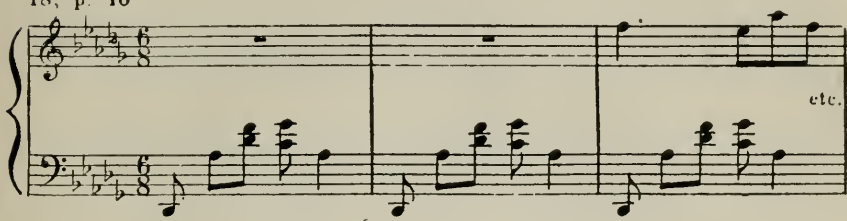
16, p. 7



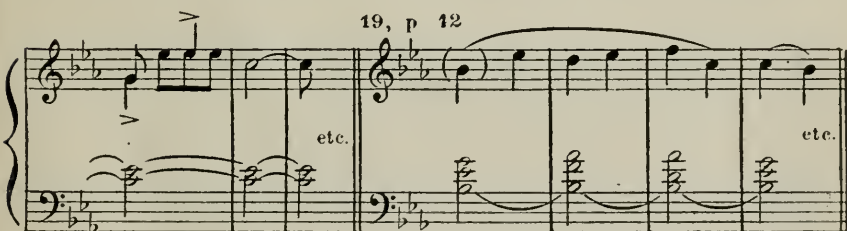
17, p. 9



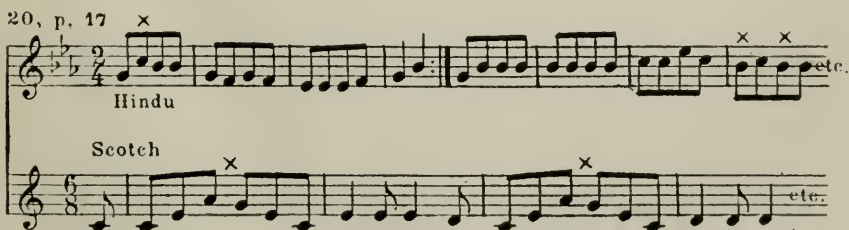
18, p. 10



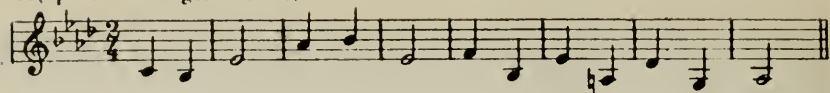
19, p. 12 & 23



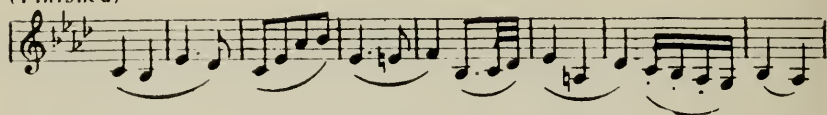
20, p. 17



21, p. 19 Adagio (Crude)

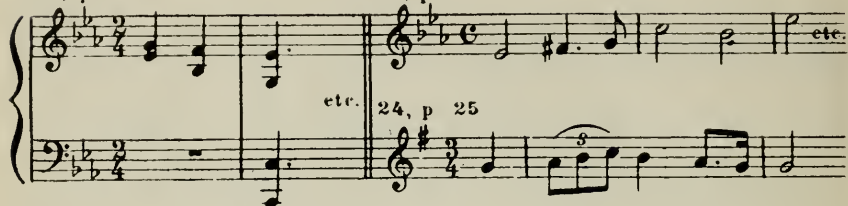


(Finished)



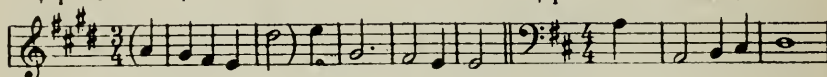
22, p. 23

23, p. 24



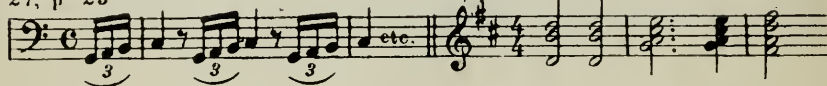
25, p. 25 Air, "Messiah"

26, p. 25 Air "Creation"

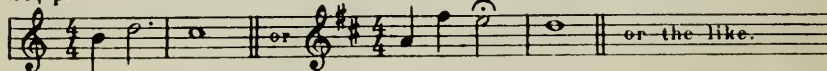


27, p. 25

28, p. 25

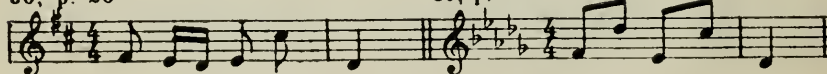


29, p. 25



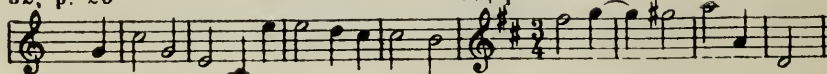
30, p. 26

31, p. 26



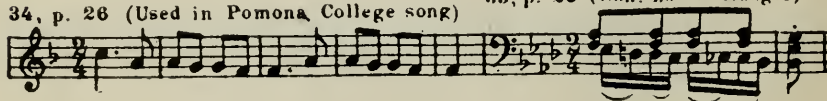
32, p. 26

33, p. 26



34, p. 26 (Used in Pomona College song)

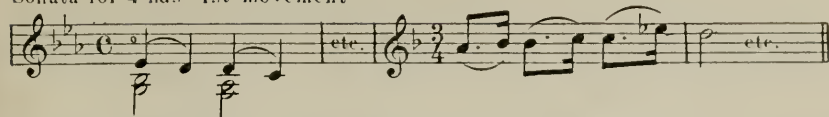
35, p. 26 (Son. no. 8 Adagio)





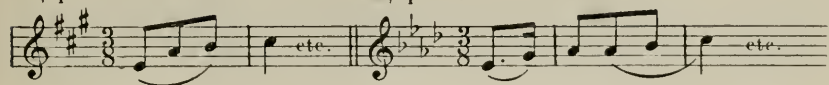
36, p 26

Sonata for 4 hds 1st movement 37, p 26 Stücke zur 4 Händen, I



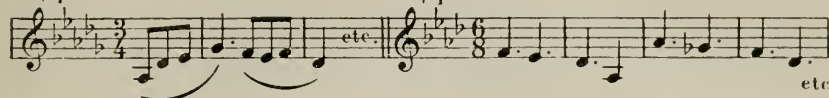
38, p. 26

39, p 26



40, p 26

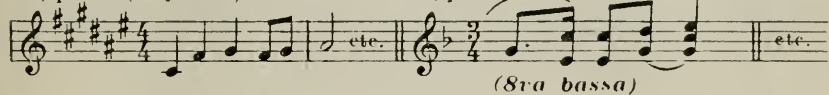
41, p 26



42, p 26 (Majnacht)

43, p. 26

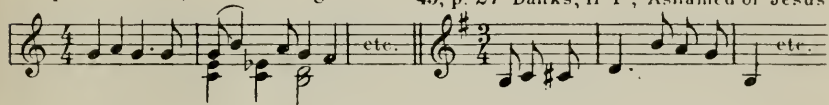
1 c 37 above



(8va bassa)

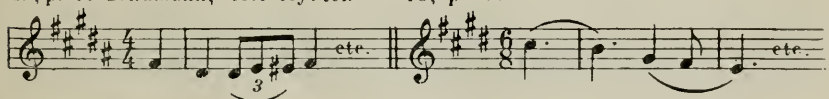
44, p 26 Wolk, H "Verborgenheit"

45, p. 27 Danks, H P, "Ashamed of Jesus"



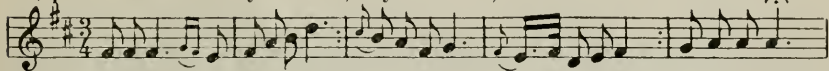
45, p. 27 Schumann, "Mit Myrten"

46, p 27

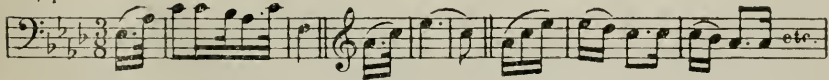


47, p 27 (Marathi Hymnbook, my notation)

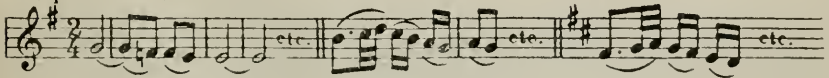
(Cadence)



48, p 28



49, p 28 Air, "Christmas Oratorio"

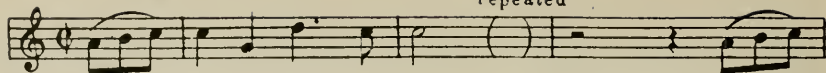


50, p 28

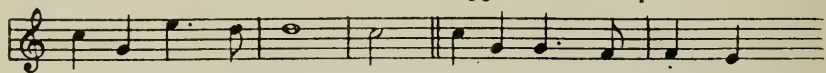


51, p 29 & 40

repeated



Suggested close p 40



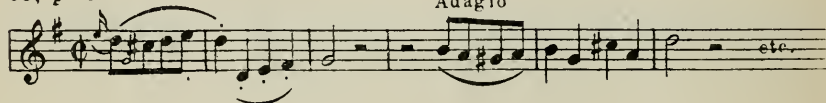
52, p 29



etc Crossing the Bar  
by Bissell.

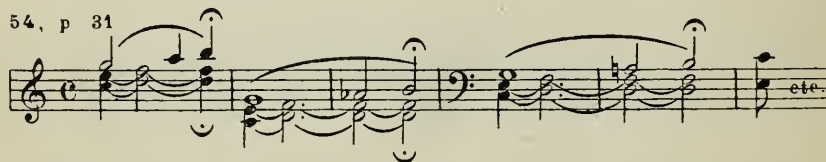
53, p 31

Adagio



etc.

54, p 31



etc.

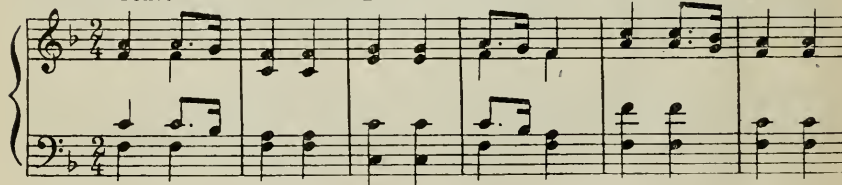
55, p 8

Tonic

Dom

Tonic

Tonic



Dom

Tonic  
Fine

Tonic

Sub d

Tonic



Da capo

56, p 35 From the original  
in the opera "Xerxes" 57, p 35

56, p 35 From the original  
in the opera "Xerxes" 57, p 35

58, p 35

58, p 35

Tonic dom ton d t d t. d t etc

59, p 35

59, p 35

60, p 36

60, p 36

etc

61, p 36

61, p 36

etc

62, p 37

63, p 38

(Alternate)

64, p 38

65, p 38



66, p. 41

Musical score for measures 66-67. The key signature has two sharps (F# and C#) and the time signature is common time (C). The score is written for piano with grand staves. Measure 66 shows chords in both hands. Measure 67 continues with chords, with the word "or" written above the right hand staff.

67, p. 41

68, p. 41

Musical score for measures 67-68. The key signature has two flats (Bb and Eb) and the time signature is 2/4. The score is written for piano with grand staves. Measures 67-68 show a melodic line in the right hand and a supporting bass line in the left hand, with the word "etc." written between the staves.

69, p. 41

70, p. 44

Musical score for measures 69-70. The key signature has two sharps (F# and C#) and the time signature is 2/4. The score is written for piano with grand staves. Measures 69-70 show a melodic line in the right hand and a supporting bass line in the left hand, with the word "etc." written at the end of measure 70.

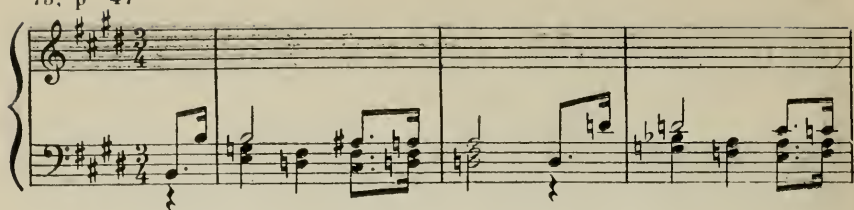
71, p. 45

Musical score for measures 71-72. The key signature has two flats (Bb and Eb) and the time signature is 2/4. The score is written for piano with grand staves. Measures 71-72 show a melodic line in the right hand and a supporting bass line in the left hand, with the word "etc." written at the end of measure 72.

72, p. 45

Musical score for measures 72-73. The key signature has two sharps (F# and C#) and the time signature is 3/4. The score is written for piano with grand staves. Measures 72-73 show a melodic line in the right hand and a supporting bass line in the left hand, with the word "etc." written at the end of measure 73. Dynamic markings include *ff* and *sf*.

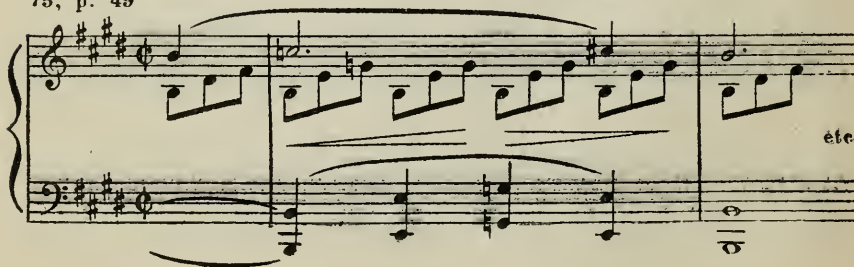
73, p. 47



74, p. 48



75, p. 49



76, p. 49

etc.

etc.

77, p. 50

etc.

78, p. 50

etc.

79, p. 50

etc.

80, p. 50

etc.

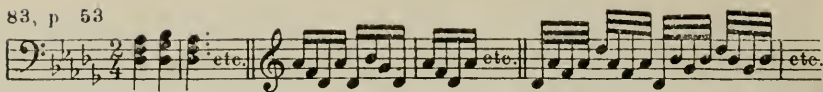
81, p. 51

etc.

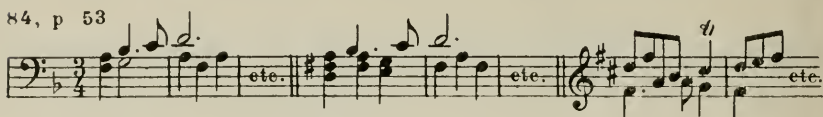
82, p. 53

etc.

83, p 53



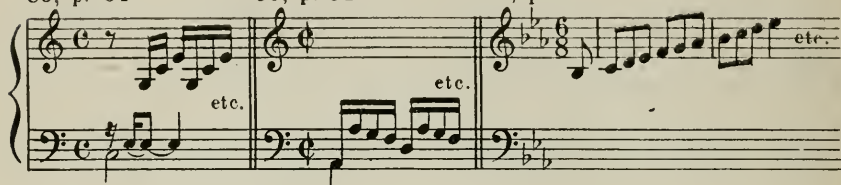
84, p 53



85, p. 54

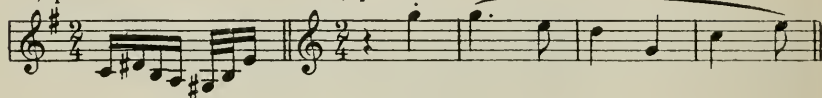
86, p. 54

87, p. 54



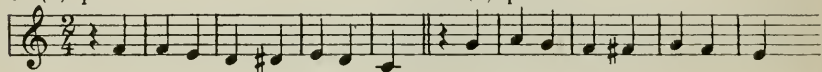
88, p. 57

89(a) p. 58



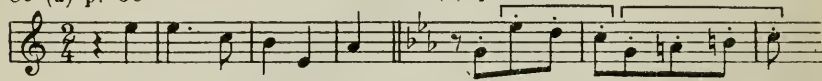
89 (b) p 58

89 (b) p 58



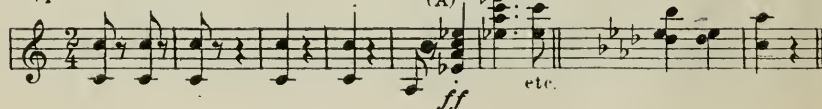
89 (a) p. 58

89 (c) p. 59

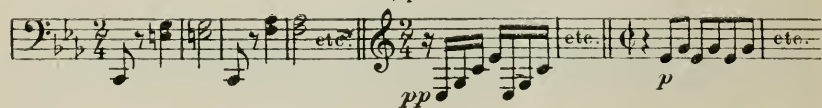


89, p. 59

(A)



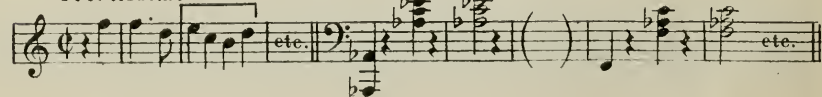
89, p 59



89 (a) p 59

89 (a) p 59

Prestissimo





89 (a) p. 59

89 (a) p. 59

*ff*

*etc.* *pp*

*ff*

90, p. 61

*etc.*

*etc.*

91, p. 61

*pp*

*etc.*

*etc.*

92, p. 61

*etc.*

*etc.*

93, p. 62

*etc.*

*etc.*

Owing to the number of references to the two Sonatas here analyzed, it was thought best to omit examples and refer the student to the copies of the works to follow the analysis





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